THE

AMERICAN FARMER:

DEVOTED TO

Agriculture, Horticulture, and Rural Economy.

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"O FORTUNATOS NIMIUM SUA SI BONA NORINT
"AGRICOLAS." . . . . . *Virg.*

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MARCH.

"In ancient times the sacred plough employed
The kings and awful fathers of mankind;
And some, with whom compared your insect tribes
Are but the beings of a summer's day,
Have held the scale of empire, ruled the storm
Of mighty war; then, with unwearied hand,
Disdaining little delicacies, seized
The plough, and greatly independent lived."

Work for the Month.

TOBACCO.

Our readers have had, during the fine winter weather, the opportunity we suggested in our January notes of getting off their hands the important but troublesome work of putting their tobacco seed in the ground. It is well if they have availed themselves of it; if not, they should take the earliest time that the state of the ground will allow. Let it be borne in mind, however, that they gain nothing in time by working their land when too wet.

Of the crop now in the house let the bulks be frequently examined. They are liable to damage by heating, and should be promptly moved whenever it is ascertained that the tobacco is becoming softer in the bulk; this indicates an approach to the condition when it will very soon be warm, and when it should be shaken out and hung astride sticks in the house till thoroughly dried. After this, whenever it becomes soft enough to be handled with safety, and when the stems are still dry enough to crack when bent, it should be put into large hulks of four or six courses, packed as closely as can be, covered with a thick layer of tobacco sticks, and heavily weighted down. It is then in condition to be packed in hogsheads for market.

The first ploughing done on the tobacco farm should be the breaking the sod of the tobacco field. It gives it the opportunity of early decomposition, and enables you to get it into the best possible condition to insure a quick and early growth—an important point in securing a profitable crop. It is not necessary to apply the manure before ploughing, but better to put it on the surface afterwards, whenever it may be convenient.

CORN.

The preparation for this crop is one of the early works of the season, which involves much heavy labor. The sod should be turned whenever it may be conveniently done. We do not care, however, to have it finished, harrowed, &c., much in advance of the time of planting, which in this latitude is not before May. Whatever manures are to be used broadcast, should be thrown on the surface after the first ploughing. Superphosphates, or other prepared fertilizers, should be applied soon after the ploughing, that they may have the benefit of the spring rains. Their action is much more uncertain on spring than on fall crops, owing, probably, to their being applied too late in the season.

OATS.

There is great advantage in the early seeding of oats, and the very earliest time after the first of the month, when the ground is in perfect order, should be availed of. It is little

worth while, except on rich ground, to sow this crop without ample manuring, and the sooner the application is made the more effective is it likely to be.

PLOUGHING.

So much depends upon the thoroughness of the first ploughing, the complete turning of the sod, that all ears should be taken to have it well done. A good plough, good team, and good ploughman, are all needed, and careful supervision besides. He who would cultivate his ground well should not be satisfied with a depth less than eight inches, and he will do better in all ordinary soils if he can reach ten or twelve. The fear which many have of bringing a little of what they call "dead subsoil" to the surface, is a causeless one. If it be "dead," the sooner it is enlivened by bringing it into contact with the atmosphere the better. The subsoil is usually richer, in fact, in some useful elements than that nearer the surface, and will, except in peculiar cases, add to rather than detract from the fertility of the whole.

MANURES.

Manures should be bought to supply deficiency of those manufactured in the yards. If composts are to be made, it is now a good time to bring the materials together for the purpose. It should be borne in mind that the high prices of produce and scarcity of labor, will justify very abundant use of fertilizers. If when laborers were abundant at comparatively small cost, it was folly to work poor land without manures, how much more so is it now.

PLASTER.

This is a cheap fertilizer, indispensable to clover, and useful to corn and tobacco. It should be sown on clover of last spring's sowing, as soon as the young leaves begin to be developed, and on the newly sown when it is well out of the ground. It is the common impression that this fertilizer acts best when applied on the leaves of the growing plants. On tobacco it is applied, a small teaspoonful to each plant immediately after the first hoeing. On corn it is sown broadcast, when it is just so high that the sower may cast it well over the tops. Being somewhat whimsical in its action, showing very remarkable effects on some soils, and being totally inoperative on others, it is not advisable to use it largely, in any locality, until it has been properly tested.

GRASS SEED.

Let the sowing of grass seeds be completed this month, should the ground be in proper condition. When it is neither too wet, nor baked by drying winds, the harrow should be run over the wheat land, the seed sown, and followed immediately by the roller. A half peck is the least quantity of clover seed per acre, and six quarts not too much when sown alone. Of orchard-grass seed, sow a bushel when sown with clover—two bushels when sown alone. It is little worth while to sow expensive grass seeds upon ground not well prepared for them. Previous cultivation for some hoed crop for one year at least, is essential in all cases, and two successive years of such cultivation is better. If heavily manured for the previous hoed crop, that will answer the demands of the grass crop for a year or two, and it will respond promptly at all times to such top-dressing as it may seem to need.

ROOT CROPS.

In the allotment or ground for the crops of the season, bear in mind the advantage to your stock of a supply of fresh food during winter. It is especially useful to milch cows, and they, at least, should be provided for in a crop of roots of some sort. Sugar beet, mangold wurtzel and ruta baga are all abundant and profitable crops under good culture, but the parsnips and orange cannot make better food for cows than either. All stock profit by a daily feed of fresh roots. We have had our stock of horses receive gratefully, throughout the winter, a mess of ruta baga.

All of these roots require deep cultivation, and very abundant when so treated.

GATES AND FENCES.

No time should now be lost in getting these in proper order. Restrain, however, the common propensity to multiply costly and needless fences.

STOCK.

Stock of every description need especial care during the period of change from winter to spring. Laboring animals should not be put too suddenly to hard work, but inured to it by degrees. Cows, ewes and sows should be sufficiently, but judiciously fed as the time of having their young approaches. Guard them strictly against accidents, and have them constantly looked after.

The Vegetable Garden.

MARCH.

The garden becomes now a matter of interest, and should have early and special attention. It should be made a model of high culture. On the farm our operations are on too large a scale to permit us to realize our ideas of the best and most profitable management. In the garden we may and should do so by digging deeply, manuring amply, and giving all the attention necessary to insure the highest results of good culture.

Asparagus.—If the asparagus beds have not been put in order in the fall, the old tops and litter should now be cleared off and the ground carefully dug, taking care not to disturb the crowns of the plants. Give a good dressing of salt—whitening the ground pretty well, and a top-dressing of two inches in thickness of well-rotted compost. If a new bed is to be made, give it a digging two spits of the spade in depth, mixing in a plentiful supply of manure. To get a new stock of plants sow seeds now in a rich bed.

Beans.—Plant string beans late this month. They are tender and liable to be killed by frost, but it is worth running some risk for the chance of an early crop.

Beets.—Sow seeds in hills two and a half feet apart. Plant out beets for next year's seed.

Carrots.—Sow carrot seeds as directed for beets, and plant for seed.

Cabbages.—Sow seeds of early and late sorts in open border. We fail of late plants sometimes by postponing too long the sowing of seed. If sown *very thickly* on well-manured ground the plants become tough, endure the attacks of fly, and crowding each other in the bed, do not become overgrown before wanted for transplanting.

Celery,—Celery seed for an early crop may be sown.

Lettuce—Radish.—Sow seeds of these in open border.

Tomato—Egg-Plant.—Sow seeds of these in border for late and hardy plants.

Peas.—Plant peas without delay, if not already done, and have a succession of crops ten days.

Potatoes.—Plant potatoes as heretofore directed for early use. Cover the sets with good compost in the drills. They may be grown very successfully laid closely together, say twelve inches apart on the surface of the ground, and covered entirely over with straw eight or ten inches deep.

Onions.—Plant out sets for early crop. For main crop sow seeds early, on very finely prepared ground, manure heavily with well-rotted manure, and keep strictly clear of grass and weeds.

Rhubarb or Pie-Plant.—Set out plants and sow seeds for a new supply.

Garden Herbs.—Every garden should have a supply of the most common sweet-scented and medicated herbs. It is now time to get the plants and set them out.

Composts.—Continue to prepare rich composts of stable and other strong manures, with leaf mould from the woods. This is one of the points in which our gardening must go beyond our farming operations. Well made, abundant composts, must be considered an essential element of success.

The Fruit Garden.

In the fruit garden, this is the great planting season. It should be completed as early as the condition of the ground will allow.—Take notice that in taking up trees or shrubs for transplanting, every care should be taken to preserve the spongioles, or small fibrous roots, that supply nourishment to the plants. If these are bruised or broken in removal, the injured parts should be cut off before setting them in the ground. Careful transplanting, and well-prepared ground are the first elements of success in this interesting branch of culture.

A good fruit garden is not limited to two or three varieties of fruits, but should include apples, pears, peaches, cherries, plums, apricots, nectarines, quinces, grapes, currants, gooseberries, raspberries and strawberries.—In making new plantations, dwarfs should be taken to some extent, as well for apples as pears, on account of their coming so early into bearing.

Geese eggs carried to the cellar as soon as laid, and kept there, will hatch well. They should be turned over once a day. Above stairs, the temperature is uneven. Number the eggs as laid, that the first goose setting may have the eggs first laid.

The Flower Garden.

Lawns.—The raking, rolling and dressing of the lawn should have attention.

Roses.—Plant out from pots. China, Tea, Bourbon, and hybrid perpetuals, planted now in rich soil, will bloom finely in fall.

Box Edging.—Plant this as suggested last month. If the weather prove dry after planting, keep newly planted beds well watered. It is especially desirable to avoid gaps in the edging.

Herbaceous Plants.—Divide and plant out these. Many of the Asters, Phloxes, Veronicas, and other strong growing kinds, throw up too many flower shoots; they should be thinned when about three inches high, not only to obtain fine heads of bloom, but also to increase the strength of the remaining shoots. Plant out Wall-flowers, Sweet Williams, Canterbury Bells, Delphinium formosum, &c.

Annuals.—Sow seeds of early annuals in patches, covering very lightly, but pressing the earth closely. Mark the places with sticks.

Pansies.—Spread out such as are in beds and cover the long stems with rich earth, to within two inches of the ends. These will root and flower well. Sow seeds in boxes. Set out plants from pots.

Bedding Plants.—Cuttings of Verbenas, Geraniums, Salvias, Cupheas, Fuchsias, Heliotropes, &c., may be put in pots, in light sandy soil, and put under glass, upon a slight hot-bed.

Tender Annuals—for early blooming, as Ten-weeks' Stocks, Mignonette, Balsams, Amaranthus, Cockscombs, German and French Asters, Phlox, &c., should be sown under glass in a moderate hot-bed.

Seed-Bed for Flowers.

Make a bed of light, mellow soil, in a sheltered situation in the garden; and as soon as the weather becomes settled, and the ground warm, sow the seeds, covering them with a little fine earth, and if very small, sift it upon them. Some one has given as a rule that seeds should be covered twice the depth of their own diameter; that is, that a seed one-sixteenth of an inch through should be covered one-eighth of an inch. Perhaps this is as near correct as any general rule can be. If the weather should prove dry after sowing, it would be well to cover the beds of very small seeds with damp moss, or what is better, with evergreen boughs. A covering of boards, or almost anything that will afford partial protection from the drying winds and sun, will answer a good purpose, for it must be remembered that seeds do not require light for their germination, and grow quite as well in the dark until they are above the ground. The covering should be removed as soon as the plants are above the soil, or they will become weak and pale. Of course, it is designed that plants from the *hot-bed*, *cold-frame* and *seed-bed* shall be transplanted to the border or beds where they are to flower, and these helps are intended mainly for *tender* and *half-hardy annuals*. The *hardy annuals* may be sown where they are to flower, though, with the exception of a few varieties difficult to transplant, it is best to grow all in the seed-bed, Some persons succeed very well by starting seeds in the house window in flower pots. A much better plan is to use shallow boxes, because the earth in small pots becomes dry very rapidly, and unless constant attention is given to watering, the plants will be partially or entirely ruined.

TRANSPLANTING.—After the plants in these beds have obtained their second leaves and made an inch or two of growth, they should be removed to the garden beds or border.—This should be done on a dull, showery day, if possible; if not, the plants may require shading after removal until they become established. In transplanting in dry weather, always give the plants a good soaking with water, and also the soil to which they are to be removed, an hour or so before removal. Remove them with the transplanting trowel, and disturb the roots as little as possible. If the plants are not too thick, this is not difficult; and in sowing, it is well to have this in view, and sow evenly and thinly. As soon as the young plants come up, if too thick, a portion should be removed. A few plants, with long tap-roots, will not bear removal well. The larkspurs are difficult; and these and the poppies, and plants with like roots, should be sown where they are to flower. Still, there are few plants but can be removed when young, with proper care. Sweet peas, candy-tuft, and a few flowers of similar character, that do best if sown early as the ground can be got ready, should always be sown where they are to flower.—*Vick's Floral Guide.*

Dairy Management.

The selection or breeding of the very best milch cows and the proper management of them, and of everything connected with the dairy, are matters of such importance that too much attention cannot be given to them. There is no use in attempting to keep milch cows with profit on inferior pastures, where weeds and coarse grasses occupy the soil.—The land must be in good heart, the grasses of the best quality and the water as pure as possible, It has been frequently remarked that even on the best pastures, cows which are compelled to drink muddy, stagnant water never produce a good quality of butter.

The large quantity of inferior butter which is always found glutting the markets is a pretty fair indication that there is a screw loose in the management of the dairy. It is probable that in some dairies all the screws are loose—the cows are not suited for the purpose for which they are kept; they have not sufficient pasture nor good water; they are worried by being driven from the pasture at a rapid rate; they are annoyed by reckless, irritable, noisy milkers. The milk house is too small or too hot; has not sufficient ventilation, and is not kept sufficiently clean.—The cream is not taken off when the milk is "ripe," and it is left to stand too long before churning. The churning process is performed too quick or too slow; the buttermilk is not worked out of the butter, although the latter may have been made soapy by injudicious handling. To finish all, an inferior quality of salt is used, and the butter packed in unsuitable vessels.—*Western Rural.*

Bran and Cotton Seed Meal for Milch Cows.

Plain bran or ship stuff, says the *Stock Journal*, is one of the very best kinds of food to increase the milk. It is not fattening. A steer could not be fattened on bran alone, and a cow, if fed on the best of hay and bran alone, might fall off in her yield, unless her strength and condition were kept up by Indian meal or stronger food. If there were anything in which there would seem to be no strength, it is bran, the mere hull of wheat. It is not stimulating, like brewers' grains, and can certainly do no harm, if it does no good; and yet any farmer who will make the experiment, will find—or, at least, we have found—that a cow being otherwise kept in a proper condition, her yield of milk will be very considerably increased by giving her twice a day a feed of pure bran. The fact is patent, although we are not able to explain it. If there is any one article, which, while keeping up the health and strength of the cow, will also increase the supply of rich, healthy milk, in our experience it is cotton seed cake meal. We have found this to have a great effect on the milk secreting organs. The cows at first do not seem to relish it, and it should be mixed with some other seed, but they soon come to like it, and we have never seen any bad effects in any way.

Raising Calves without Milk.

Calves can be raised very readily without much milk, by feeding them on hay tea, oil cake and meal. They should have for the first three or four days two or three quarts of milk at a meal, then gradually some food in the shape of gruel is added, and by degrees water is substituted for milk. Mixing oil cake with gruel is the secret of success. Use half oil cake, the best you can buy. Take a large bucket capable of holding six gallons, put into it two gallons of scalding water, then add several pounds of linseed cake, finely ground. Stir the oil cake and water together and add two gallons of hay tea.

The hay tea is made by pouring scalding water in the morning on good sweet hay, in a tub, the tea standing covered till night, and having seven pounds of meal (middling barley or oat meal) stirred into a tubfull before used. The same hay will bear a second infusion during the night, for next morning. Two quarts per head, with an equal amount of cold water, is enough for a feed. The old plan of letting them suck through the cowman's finger's is preferred, and as soon as they can eat, crushed corn, sweet hay and roots are placed within reach; feed vetches as soon as ready, and mangels, of which a supply should always be stored if practicable. The calves should be placed in a dry, well ventilated house, kept very clean and quiet, supplied with fresh water daily, and the manure frequently removed.—*Stock Journal.*

A correspondent of the *Country Gentleman* says he killed briars by a single cutting with a grubbing hoe, done after the snow was off in the spring, and before the ground thawed. Mowing in spring or summer increases them.

Phosphates in Agriculture.

Much attention has been given of late in France to the treatment of coprolites and other bodies containing phosphates applicable as manures; and an agricultural writer, M. Adolphe Bobierre, has given, in the *Journal de l'Agriculture*, of Paris, an account of the methods in action, and experiments in connection with this important question.

"Guanos from tropical regions," says M. Bobierre, "bone ashes from the pampas of Central America, phosphorites and apatites from Spain and Portugal, coprolites and nodules from the early limestone formation, the refuse of sugar-houses and refineries, gelatine and button manufactories, everything in fact which contains phosphoric acid in any quantity, is now the object of serious and generally profitable application. Guano is obtained from the giddy heights of the mountain peaks in sight of the coast of Bolivia, while in the Ardennes it is found worth while to remove sixty or more metres of argillaceous earth to obtain a ton of phosphated nodules, which, when washed and pulverized, rival bone-black."

The writer recognizes the great activity of English chemists and agriculturists with respect to phosphates and the production of superphosphates, and the immense services which they have rendered; but adds that the manufacture of superphosphates cannot be said to be perfect so long as the sulphuric acid is lost.

With respect to what has been done in France, M. Bobierre gives some interesting examples. The nodules of phosphate of lime have been largely employed in Brittany, in the cultivation of the Landes, in the place of bone-black, which has been used largely for thirty or forty years; this has created a very important employment, and we are told that many of the dealers in manure have entirely given up the sale of bone-black for that of pulverized fossil phosphates. Attempts have been made to separate the phosphates from the 80 per cent. or more of silicious matter with which they are associated, and also, on the other hand, to produce mixed manures, in which the activity of the phosphoric acid should be brought out in the most effective manner; these desiderata have been realized with considerable success. One process is to treat the rough phosphates with chlorhydric acid, and to recover the acid by evaporation. Another process mentioned is to convert the nodules into metallic phosphites by calcination in a blast furnace, in contact with iron ore, and then to transform the metallic phosphites into alkaline phosphates by the action of chloride of sodium at a high temperature. A third method is to attack the fossil phosphates by means of chloride of manganese with an excess of acid, obtained from the manufactories of chlorides for bleaching and other purposes; and, lastly, the fossils are sometimes simply calcined with gas tar or other similar substances.

The writer says that the results of the above methods and experiments have confirmed him in a previously expressed opinion, that if the nodules be reduced to a powder, and the powder exposed to the action of the air, and applied to soil requiring the application of phosphoric acid, the fossil phosphates are perfectly assimilated; and, further, that a mixture of fossil phosphates with ordinary manure yields the most admirable results, even in the case of old cultivated lands. "Let farmers only adopt the habit of throwing fossil phosphates under the animals;" says the writer; "nothing more is required."

M. Bobierre seems to consider the treatment of nodules by means of acids as scarcely called for, but recommends this process strongly in the case of phosphorites, apatites, and certain phosphatic guanos found almost in a vitrified condition.

With respect to France, the writer observes that within a short distance of the coasts of Spain and Portugal, where the tribasic phosphates, containing 70 to 90 per cent. of phosphate, may be obtained at the rate of 2s. 6d. to 3s. 4d. per cwt., enormous quantities of hydrochloric acid are wasted, and worse than wasted, by being allowed to vitiate the air; the town of Marseilles, which converts large quantities of sea-salt into sulphate of soda, is destined to waste annually 50,000,000 of pounds of hydrochloric acid, which could, with very little trouble, be made to dissolve the natural phosphates.

In connection with the above may be mentioned a communication made by MM. Dusart and Pelouze to the Academy of Sciences. One of these gentlemen, in a work entitled "Researches on the Assimilation of Phosphate of Lime," showed that, when acted upon by the gastric juice and very diluted lactic acid, phosphate of lime underwent partial decom-

position, yielding a mixture of lactate and acid phosphate of lime; this led to experiments on the action of carbonic acid on phosphate of lime, with the view to throw some light on the obscure subject of the assimilation of phosphate of lime by plants. In 1864, M. Dumas noticed that carbonic acid was a solvent for phosphate of lime, by the effect of seltzer water, in softening ivory and abstracting all the calcareous phosphate therefrom. Other chemists have regarded this action as merely a solution of the salt by the carbonic acid, but MM. Dusart and Pelouze are of opinion that the action referred to is of a more complicated character, and that the acid absorbed gives birth to new products.

These gentlemen treated gelatinous phosphate of lime with water, saturated with carbonic acid, and found that after some time the acid had partly disappeared, and the phosphate itself had notably diminished; the transparent liquid obtained by filtration deposits by heat a crystalline precipitate, composed of phosphate and carbonate of lime. A series of nice experiments is then detailed to prove that bibasic phosphate of lime is produced, either by the action of carbonic acid on tribasic phosphate of lime, or by that of acid phosphate of lime on the carbonate. On this principle, say MM. Dusart and Pelouze, we have been able to produce it by the following economic practical method, in such a state of purity that, compared with superphosphate, it contains double the active power in an equal volume. The matter to be dealt with—natural phosphates, coprolites, bones or animal charcoal—are placed in wooden vats lined with lead, communicating with each other and covered with a mixture of water and acid; any acid will effect the transformation, but we prefer hydrochloric acid, or the weak nitric acid, which is wasted in so many works. When the acid is macerated in one vat, we remove it into a second, and if necessary a third, and the clear liquor is finally treated with pulverized carbonate of lime; effervescence is produced, carbonic acid is thrown off, and a precipitate of white crystalline bibasic phosphate of lime is thrown down. When sufficient carbonate is used the liquor is deprived of all the phosphate that it contains, and the precipitate is easily dried and washed.

These facts enable the chemists in question to form the following hypothesis concerning the manner in which nature enables plants to take up phosphates. It is evidently in the soluble form that the plant uses them for its nutrition; the common phosphate of lime, completely insoluble in water, should therefore be rendered soluble. Carbonic acid dissolved in water performs this first transformation in the same way that the stomach of an animal renders it soluble by converting it into acid phosphate and lactate of lime. The enormous quantity of superphosphate of lime employed in England, a practice now adopted in France, is quoted in support of the above theory. The superphosphate, which, according to these gentlemen, is only an impure acid phosphate of lime, when introduced into the soil attacks the carbonate of lime, under the influence of humidity, and is thus transformed into a bibasic phosphate. As it is impossible to imagine that any substance can be entirely absorbed by plants during the first few days of its being spread upon the ground, if the superphosphate do not undergo this transformation, which diminishes their too great solubility, they would certainly be carried down to the sub-soil by the first heavy rain, and part of their value thus lost. The facility with which bibasic phosphate of lime can be produced in a state of great purity, renders it a promising substitute for common phosphate, and even for superphosphate, which is always mixed with a large proportion of other matters, which have no value as manure, and of which the cost of carriage is, therefore, at any rate, a loss to the farmer.—*Journal of the Society of Arts.*

Preserving Fence Posts.

It is a well known fact that the decay of wood is chiefly owing to the presence of albuminous or nitrogenized substances contained within it. As these substances go into decomposition, as they rapidly do, they induce decay among the more solid particles of carbon. Various ways have been resorted to for coagulating this albumen as a means to secure the preservation of wood. But all the methods that have been resorted to are too expensive to be employed in the preservation of fence posts.

Ship builders have a method of preparing timber, which is not expensive, and which might perhaps be employed with profit by farmers in preparing fence posts. They work out the lumber to about the size that is required, and then immerse it in water for sev-

eral weeks or months. The water gradually dissolves out and washes away the nitrogenized or albuminous matter, and thus effects the preservation of the wood.

The question arises, cannot such a course be profitably practiced in relation to fence posts, by farmers who live in the vicinity of a pond or stream of water? We have heard farmers who came from the East, say that fence posts do not last as long here as they did there. If this is the fact the cause may be attributed to the different ways they are got to market. In many parts of New England, and we presume in New York and Pennsylvania, cedar posts are rafted down long rivers, and are often in the water several weeks before they are seasoned; while here, they are piled up to season, as soon as they are cut.

Doubtless the best way to get rid of the albuminous matter would be to entirely immerse the posts in water, by putting weights on them; and it would appear that running water would be preferable to that which is still, since the matter would be washed away as soon as it had soaked out.—*Prairie Farmer.*

What a single Cow should be.

It will be said the best of course, But why? Simply because the most is to be obtained where but one cow is kept. And is this a benefit? No one will deny that it is. The better your cow is kept, the greater will be, not only the benefit, but the profit on the keeping. This lets the secret out of the bag. If it is profitable to get the best cow and keep her in the best manner, then it is profitable to get a whole dairy on that principle. Will any one tell us why this is not done? We can answer this readily. There is a slackness in the case; we are in the habit of not doing it. It is necessary for us to get out of our tracks; devote a little time to this thing—most of all begin right. Keep less cows, and keep well, and those of good quality—and be not discouraged if you do not succeed, as well at first as you anticipated; remember always that there are those who do succeed, and that all succeed in the long run, and should be profited immediately, just as a man who keeps a good single cow is profited immediately—that is, in a short time, at least. A single cow generally improves; so will a herd if kept equally well.

Let us then get single cows for our dairies. In doing so we will find out it will be more in the keeping than in the selecting, unless we have reference to blood.—*Valley Farmer.*

Stacking and Gathering Hay.

ITS COST BY THE USE OF MACHINERY.

For the benefit of your numerous readers I will give the actual cost as it has existed with me the past harvest, in putting up one hundred acres of good meadow hay by the use of machinery. In summing up the account I find it as follows, estimating the labor as I paid for the same the past harvest, in putting up one hundred acres of meadow that would average one and a half tons per acre:

First. I will give the price I paid for labor:

One man's labor, including board, per day	$2.00
" Boy's " " " "	1.00
" Team's " " " "	1.00
" Horse's " " " "	50

Second. The cost of machinery, including the average durability and wear of the same, with interest on the money invested at the rate of ten per cent. per annum:

1 Mowing Machine—av'g usefulness			5 years		$85.00
1 Revolv'g Hay Rake,	"	"	5	"	10 00
1 " Hay Gatherer,	"	"	6	"	45.00
1 " Hay Elevator,	"	"	10	"	75.00
Cost of machinery used					$215 00
Annual interest on investment					21.00
Avg. wear of Mowing Machine, per year					$17.00
" Revol'g Hay Rake, "					2.00
" " Hay Gatherer, per year					7.50
" " Hay Elevator, per year					7.50
Total wear per year					$34.00

Putting up one hundred acres of meadow hay, being one-third of a season's work, would be thus:

Wear and loss on machinery	$11 33⅓
One-third of annual interest	7.16⅔
Per centage of loss on machinery	$18 50

Third. The time consumed in cutting, raking, gathering, conveying and stacking one hundred acres of meadow hay.

The number of days required, the cost of the work, by the aid of machinery, I find thus:

10 days' mowing by man and team	$30.00
6 " raking into winrow, man and horse	15.00
8 " gathering and convey'g, man and team	24.00
4 " stacking, 2 men, 1 boy, 1 horse	22.00
½ day consumed in fastening ricks and moving elevator from place to place	2.50
½ day consumed putting machines together for use and taking to pieces for stowage, ½ being the estimate	83⅓
Wear of machinery ½ of a season	11.33⅓
½ of the annual interest on cost	7.16⅔
Cost of putting up 150 tons of hay by the use of machinery	$112.83⅓

It will be observed that the estimated average work of each implement used is:

Mowing machine, cutting 10 acres per day.
Revolving hay rake, raking 16⅔ acres per day.
Revolving hay gatherer, gathering 12½ acres per day.
Revolving hay elevator, pitching 37½ tons per day.

Which is not as much as these machines would do if worked with energy in a moderate hay season.

As to the cost of keeping this class of machinery in repair, if properly made, it would amount to almost nothing the first two years of use. After that time some repairs may be necessary. Probably from five to ten per cent. of their original cost would keep everything in good repair the third season.

This depends entirely on the way and manner they are used. The mowing machine may require to be metaled with Babbit's metal the third year of use; the other machinery would remain good with the exception of a pair of new shoes on the hay gatherer, which any farmer can put on.

I will now, in the way of comparison, proceed to examine the cost of obtaining this valuable crop as it existed before the invention and use of machinery to cheapen it to the farmer.

Taking into account the labor required to put up one hundred acres of meadow hay at its present rates, it would figure thus:

100	days'	mowing with scythe	$200.00
100	"	raking, turning, etc., with hand rake	200.00
25	"	cocking, at 4 acres per day	50.00
33	"	hauling by boys with ropes	33.00
33	"	horse labor, at 50 cents per day	16.50
11	"	man hitching rope for boys	22.00
20	"	pitching, at rate of 7½ hours per day	40.00
11	"	stacking	22 00
		Total cost	$583.50
		Deduct work as done by the use of machinery	112 83
		Balance in favor of machinery	$470.67

The above estimate by hand labor is made from the average quantity of work usually done by farm hands, provided no unnecessary time is wasted.

Amount performed each day to the head:

Mowing with scythe		1	acre per day.
Turning, raking, etc		1	"
Cocking	80 cocks, weight 150 lbs	4	"
Hauling	60 " "	3	"
"	180 " "	9½	"
Pitching	15 tons by 2 men	10	"
Stacking	15 tons by 1 man	10	"

Hay crop by hand labor:

Debtor—

To cash paid for labor	$583.50
" " land rent	300.00
Total cost	$883 50

Contra, Creditor—

By 150 tons of hay sold at $5 per ton	$750 00	
Value of fall pasture	100 00	
		$850 00
Loss on the crop		$33.50

Hay crop by machinery:

Creditor—

To 150 tons hay sold at $5 per ton	$750.00
Value of fall pasture at $1 per acre	100 00
Total value of crop	$850 00

Debtor—

To cash paid for labor, etc	$112 83	
" " land rent	300.00	
		$412 83
Net profit		$437.17

Thus hay put up by hand labor would have to sell at $6 per ton in the field to pay its cost to the farmer, allowing him only a very small compensation for his time and services, whilst hay put up by the aid of machinery will pay a net profit of $427,17 when sold at $5 per ton in the field.

Thus, by substituting improved machinery to do our work, we have cheapened this crop nearly two-thirds its full value in the stack, estimating it to be worth only $5 per ton.

It is with difficulty that we obtain the farm hands now; with the large area of acreage we have to cultivate in the West we could not, without resorting to the aid of machinery, with any degree of economy, possibly take care of the crop and save it in good condition in the proper season, with other farm work pressing us as is generally the case at this season of the year.

Therefore, I say the hay machinery of the present day is the most complete and perfect of any machinery adapted to use by the farmer, with large profits and good results; the first great object being to obtain our feed at a low cost, in good order and condition, and thus enable us to provide plentifully for all our stock, with the cheapest and best food obtained from the cultivated field.—*Cor. Prairie Farmer.*

A farmer in Michigan, finding that his sheep were disappearing mysteriously recently, set a wolf trap in the field. A few days afterwards he found it sprung, and now one of his neighbors is laid up with a sprained ankle.

From the Practical Farmer,

Report on Rinderpest, of the New York Agricultural Society.

TO PASCHALL MORRIS: Since I last wrote to you, I have received a copy of the very valuable reports of the special committee appointed by the New York State Agricultural Society, on the disease known as the Rinderpest. I have not yet been able to give it a thorough perusal; but as the pleuro-pneumonia continues to prevail in our county and with much mortality, and as it also is quite fatal on some farms in Chester county, it may be well to offer to your readers a brief sketch of the most approved modes of treatment put forth by some of the leading veterinary surgeons of England.

In the work before me, Dr. Smart, of Edinburg, and Professor Gamgee are spoken of as the very highest authorities. You may possibly remember, that on a former occasion, when endeavoring to show the great similarity if not absolute identity of the two diseases, I quoted from Dr. Smart, that two-thirds of all the cattle dead from the cattle plague in England, which were examined, died from pleuro-pneumonia. If, then, the treatment recommended by him for Rinderpest was useful in the cattle plague of England, it will certainly be valuable in our disease.

After insisting upon careful and assiduous nursing, he proposes three kinds of drugs as *all* he found necessary to employ:

"*Laxations*, with diuretic action, viz: Saltpetre and powdered ginger—each one ounce; sulphur two ounces; molasses one pound, and water enough to make a quart of the mixture.

2. *Stimulant*, as, carbonate of ammonia, three-fourths of an ounce; sweet spirit nitre, and spirit mindererous—each one and a half ounces; cold water, nine ounces.

3. *Tonics.*—One and one-half ounces of powdered bark, to be used when convalescence is fully established. This is given in the early period of the convalescence, in combination with the stimulant, and at a later period, *with a quart of good sweet ale*, once daily and at night. He recommends also that two tablespoonsful of laudanum be added to any of the mixtures prescribed, or combined with its food, to control excessive diarrhœa or obviate straining."

His plan of diet requires the use of simple food, and, until decided convalescence, well cooked, and given in small portions, at regular hours. The full diet is composed, viz:

"Four handsful each of bran and brewer's draff; one pound of peas-meal; two pounds of mashed turnip (well boiled), not too thick, and given *night* and *morning*. At *mid-day* a gruel is given, of two pounds of oatmeal, well boiled in six quarts of water. In addition to these, some raw turnips (two pounds, for example, of green-tops), and one pound of hay, may be allowed in small quantities during the twenty-four hours. To allay thirst, three or four quarts of water, previously boiled and allowed to cool, are given in mouthfuls during the day.* This constitutes the full diet of a decided convalescent. *Half* of this diet is, in most instances, during the acute course of the disease, *too much*. In all cases the same kind of food and periods of giving it are followed. There are some animals that for a time refuse all food, not excepting gruel. In such cases the gruel is administered by the bottle thrice daily, along with or after the medicine. The animal should get a little mash so soon as it takes it voluntarily. It is often expedient to miss a meal, especially whenever symptoms of an unfavorable indication appear. These are not of unfrequent occurrence during the course of treatment. Grass is given, and the quantity of hay and turnip increased as there is progress toward more perfect recovery."

His summary of treatment is as follows:

1. The animal is at once taken from its ordinary food and separated from the rest.

2. It is to be placed in a well-aired byre or house free from draughts, and the temperature of which is maintained at 70° Fahr. or 75° Fahr.

3. It is to be well rubbed down, and thoroughly cleaned and covered with a good rug.

4. If there be constipation, begin with the laxative and continue, night and morning or if required, oftener, until there is free scouring.

5. Let there be no delay in giving the stimulant, and, if needful, combine it with the laxative.

6. Defer giving ale and bark until convalescence appears.

7. To obviate straining or excessive purging, two tablespoonsful of laudanum night and morning, may be added to other medicine.

* Many of the diseased animals evince a remarkable predilection for charred wood; and as carbon is an excellent antiseptic, it is only obeying a natural indication to supply materials to satisfy this craving. To do so, charred wood may be boiled with the water, and a few small charred branches of trees placed in the stall.

8. Be careful to avoid overfeeding, as an error in diet may prove fatal.

9. See that the cow is well milked night and morning (even when there is no yield), during the course of the disease.

10. All the droppings should be at once disinfected by solution of the chlorate of lime, and quickly removed.

11. The affected animals should be frequently and closely observed, and threatening indications treated as they occur.

After thus announcing the treatment of Dr. Smart, the committee give in detail "several examples of successful treatment, to serve as a guide as well as an encouragement to the uninitiated," some of which we may notice in your next number, as much of the success in treatment depends on the mode of using the remedies, and the care in nursing.

HIRAM CORSON, M. D.

Montgomery Co., Pa.

Agricultural Professors.

The trustees of one of our agricultural colleges told me that they could get ten literary and scientific professors easier than they could get one for the department of agriculture. And I notice that "one of the foremost colleges of the country" is advertising in the newspapers for a "Professor of Agriculture." This is rather hard on the trustees. I am very sorry for them.

I do not know what college it is that is advertising for a Professor of Agriculture, but I presume they will get scores of applicants! It will not be an easy matter to make a selection, and the better way would be to put the names in a hat and draw out one, and let this be the successful candidate! The chances are that he will be as good as any! Some years ago, a city man who had dabbled a little in chemistry asked me to recommend him as Professor of Agricultural Chemistry to a newly started Agricultural College. I forget whether I complied or not. He knew nothing or next to nothing about agricultural chemistry, but as there are few people who know any more, I told him I thought he would probably do as well as the next man. He applied for the place. The trustees met, and it appeared that there were two candidates for the Professorship of Agricultural Chemistry, and none for the Professorship of Practical Agriculture. They made the appointments, and my friend came to me laughing and excited. "Here's a joke," he said; "those people have appointed me Professor of Agriculture, and I don't know what to do about it." "Accept, of course," I said. "You are out of a situation, and if you go down there something will turn up. Perhaps the other man will resign, and then you will probably be appointed to the chemical chair and will get along well enough." "I'll do it," he said, "but it's a great joke." And so it was. He was a good fellow, but did not know a Short-horn from a Devon, or a Southdown from a Merino, and it may well be questioned if he knew wheat from barley. His whole life had been spent in the city, and he was not to blame for knowing nothing about farming. But the fun of the joke is that he is to this day, or was the last time I heard of him, Professor of Agriculture in one of our prominent agricultural colleges, and a writer for one of our agricultural papers. And, truth to tell, he writes as well and knows as much about farming as the editor himself.

These matters will right themselves by and by. Agricultural colleges will endure much tribulation, but there is a necessity for them, and they will ultimately prove eminently useful and be established on a permanent basis. At present, too much is expected from them by one class of people, and too little by others. The Professor of Agriculture should be a practical man and a man of good common sense. The more he knows of science and the less he says about it the better. It is not his province to tell the class how crops grow, but to show how to grow them. Let the chemist teach chemistry, and the farmer, farming. There are not ten men in the world who can teach both. Let the Agricultural Professor teach the young men how to clean a horse, how to bed him, when to water and feed him, how much he will eat, and what is the best food. And so with cows, sheep, and pigs. Fancy my old city friend a Professor of Agriculture, talking about such things to his class, and going on the nigh side of a cow to milk her, and suddenly finding himself, milk-pail and gold spectacles, upset by a protesting kick. But a really practical, intelligent man could teach any young farmer a good deal about such matters that would prove very useful to him in after life. So in regard to ploughing, harrowing and cultivating.—There is great need for the exercise of a little common sense about these ordinary opera-

tions. There is a chance for great improvement in the common methods of doing them. Why should a man plough when the same effect can obtained at half the cost by the use of a cultivator? And why need a man waste half his time driving two horses on a harrow or cultivator, when he can just as easily drive four and do double the work, or do it a great deal deeper and better? Let whatever is done on the farm or in the garden be done in the best manner. Let not a weed grow. Sow no crop unless the ground is in good order. If a field intended for winter wheat cannot be got into good condition, give up sowing the wheat, and plough and cultivate the land two or three times in the fall, and sow it to barley the next spring. Better have a good crop of barley than a poor crop of wheat—better far for the land, and a good example for the boys.—Nothing is more important than to teach them not to expect good crops without good preparation. Let them know that there is no royal road to farming, and that there is more hope of improving old processes than of discovering new ones that shall revolutionize our system of agriculture. Let them know, however, and, what is more important, let them *see*, that it is just as easy to raise 30 bushels of wheat per acre as 15, just as easy to raise 150 bushels of potatoes as 75, and *ten times* more profitable. A little figuring would convince any one of the fact, and yet few farmers understand it, because they think about gross receipts and not about the profits left after deducting the expenses.—*J. Harris, in Am. Ag.*

Weaning Colts.

I put the colt in a good pasture, and if I can do so I give some company that it is acquainted with. But, at any rate, I put the mare in the adjoining field; then they both feel as though they were not separated, and do not wear off any flesh by anxiety and running. And I take the mare in to the colt twice a day for two or three days, and let it suck. After that I let it suck once a day, for two or three days; then I let it suck for every other day for two or three days; and if necessary to dry up the mare, I will perhaps let it suck once or twice in the course of the next week. By that course the colt will get weaned, and the mare will be dried up, and neither of them lose flesh or be punished, which is both to my interest and their mutual comfort.

Another subscriber writes:

"In answer to the query respecting weaning colts, I beg to submit the following note. There are various ways in which they may be weaned. I think as good a way as any is to take them from the dam and tie them in a stable by themselves, with strong halters, and give them milk from the cow, which they will take the second or third time it is offered to them, if they get no water. You may give the milk and water as suits. Afterwards, give a few oats, and all the hay and green clover they can eat, when it can be got. At the end of seven or eight days, lead them out to the field at noon, and take them in at night (there must be good fences to keep them in.) By doing so, you will soon have them to lead like old horses."—*Ex.*

Fresh Importations of Poultry.

D. W. Herstine, of this city, whose importations of prize poultry from England, last spring, attracted so much attention, and of which we have published several groupes of portraits in the "Practical Farmer," has lately received some fresh lots of carefully selected birds. He has been selling produce from the first lot at $20 per pair—and the demand has so far exceeded his supply, at this price, that a fresh importation seemed necessary to prepare for next season's sales.

To give some idea of the expense of procuring fine specimens from abroad, we copy the following invoices, lately arrived:

A light buff Cochin pullet, winner five first prizes	£3	3	0
Three light buff Cochins, winners at Farnsworth and Chester	6	6	0
Four silver gray Dorking pullets, first prize at Manchester	8	8	0
Four dark Brahma pullets, from last year's Birmingham prize birds, at 35s	7	0	0
Harpers' and other expenses	1	15	0
	£26	12	0

Also, by another vessel, twelve dark Brahma pullets, one-third of which were imported on account of Jos. M. Wade.

It will be recollected that to first cost must be added, freight across the Atlantic by steamer, and various other expenses and risks. While the aggregate makes a round sum for each, involving more outlay than many persons would be willing to incur, there is yet encouragement in the fact, that the best specimens bring readily such prices abroad, and that there is more demand here then our friend Herstine has yet been able to supply.—*Practical Farmer.*

Degeneration of Wheat.

The marked improvement in the breeds of cattle on this continent affords very striking evidence of what may be done by care in breeding and rearing stock; and the same progress in horticulture, as the result of judicious selection and culture, may also be seen in the quality of various fruits that, year by year, are supplied to the market. But in the case of the most important agricultural product, wheat, there seems a constant tendency to degeneration. The virgin soil of this continent, within certain latitudes, usually produces abundant crops of this staple cereal; but after a time, the yield begins to diminish, both as regards the size and quality of the grain and the quantity per acre, till at length, perhaps, its production ceases to be profitable, and new land is sought for raising this almost essential staff of life. Thus the wheat-growing region seems to shift its locality with the tide of emigration, from east to west.

Another somewhat similar fact also challenges attention—that new varieties of this grain, however excellent and prolific they may be, seldom retain their reputation for any lengthened period. After a time, some of them will cease to be grown altogether, and give place to other favorites; and this by no means as a matter of fashion or caprice, for farmers are usually too practical for such folly, but on account of acknowledged degeneracy in the once good variety.

No doubt the reasons for this result are various, and some of them doubtless obscure; yet so important is this crop and the interests connected with it, that no subject in the range of agriculture is better worthy of careful investigation. We are glad to find that the matter is being taken up by agriculturists in the adjacent Republic, and wheat conventions are to be held in more than one of the States, to compare the experience of farmers in various sections of the country, and discuss the important subject in all its aspects.

There is one point which we feel assured is worthy of more attention than it generally receives, that is, the careful selection and treatment of seeds. On physiological principles, and from the results of actual experiments, it is clear that marked and permanent improvement may be attained in wheat, as in other vegetable products, and notably in breeds of animals, by selecting the best samples, and those only, for propagation; and in this selection every important quality should be regarded—the number of berries on the ear, the size of the grain, the quality of the flour, the prolificacy, earliness, and hardiness of the variety. In reference to this subject a very interesting paper was recently read at the first meeting of the Botley Farmers' Club, by Mr. Hallet, of Brighton, England, on "Pedigree in Cereals." Mr. Hallet has for twenty years closely studied and experimented on the growth of cereals, and comes to the following conclusions: "1. That no two grains of any cereal will produce plants precisely equal, and that, therefore, in any given quantity of any cereal, whether a dozen grains, a pint, or a quart, there is one grain superior in producing power to any of the others. 2. That this superiority is inheritable. 3. That it may, by the repeated selection year after year of the best descendant grain, be greatly increased, and become practically fixed." He illustrated these statements by a variety of examples, and gave an instance in which he had obtained a winter variety of wheat from what had previously only been raised as a spring crop. Had we space we should be glad to give the whole of the lecture, as reported in *Bell's Weekly Messenger;* but, though we hope to recur to the subject again, we can now only add the concluding paragraph, which is as follows:—"We come now to enquire what is the practical meaning of pedigree? It is this:—We grow a certain crop (say of wheat) of forty bushels per acre, and we wish for more. How is more to be obtained? Can we grow more ears in number, and if so, by what method? Can we sow more seed per acre? No; for if we do we shall obtain green-meat, not corn. But cannot the number of ears produced per acre be increased? No. If we plant single grains six inches by six inches, nine inches by nine inches, twelve inches by twelve inches every way, if we drill one bushel, or 'broadcast' two bushels per acre, we can only obtain about one million ears per acre. The only means of increase, then, is by increasing the contents of the ears, and this I have effected by my system of selection. Thus I have already doubled the contents of the original ears of the three varieties of red, white, and blue pedigree wheat, and these have just the same tendency to produce large ears as pure bread Durham cattle have to produce like progeny. But in order that this power may be freely and fully exercised, each grain must be planted by itself,

with a space around it depending upon the time at which it is sown. That the grains should be planted singly is essential, at whatever distances apart they are deposited; for if you make a series of holes and plant one grain in the first, two in the second, three in the third, and so on, you will obtain a greater produce from the hole planted with only one grain than from any other of the holes. The number of ears possible per acre being fixed, the size of the ears depending upon the space alloted to each grain, and the greater the space each grain has to fill the longer the time required for doing it—we come to the necessity of early planting, when only two or three gallons of seed per acre are used, and when the utmost result possible is expected." Mr. Hallet said that he usually sowed seed about six and a half inches apart, and at the rate of eight gallons to the acre.—*Ex.*

Pasture Management.

Few branches of farming are more important in a community where the dairy constitutes a leading pursuit, than the proper management of pastures, and the general cropping of the farm designed to feed, in the best manner, the largest number of cows. It has become a matter of supreme importance to us in New England, for the reason that from long cropping and inattention, our pastures are supposed to have become deteriorated, and we wish to learn the best and most economical methods of restoring them to their original productiveness, and to maintain their fertility.

This question of pasture management is too extensive to admit of our going into it minutely at the present time, but to show how pastures are managed in Holland, the first dairy country of Europe, may serve to suggest some thoughts as to their importance and management here.

The pastures there are what may be called natural, which in Europe means pastures stocked with the natural grasses, or grasses proper, instead of the artificial grasses, such as clover, sainfoin, lucerne, etc. The turf or sod is closely set with the finest and closest herbage, while the soil and climate and the constant attention on the part of the dairyman, secure to them the greenest and most vigorous growth, uniform and luxuriant throughout.

The cattle and sheep are turned out as early as the first of May, and the pastures are divided by hurdles into two parts, one devoted to the growth of grass to cut for hay, and the other for pasturing. For every five or six acres you will see five cows and six sheep. By the middle of August, after the hay crop is all off the ground, the hurdles are taken away and the cattle have the run of the whole for the rest of the season. The size of the pastures and the system of small holdings which prevail in that country, makes it impossible to adopt the alternative system, or the plan of frequent change of pastures, which is advocated by many dairymen in this country.

You see everywhere running with the cows about an equal number of sheep. The price or the profit of raising meat is such that it is for the interest of the farmer there to make the most of everything, and to adopt the motto so popular here, and "push things." The sheep eat down the hard wiry grasses which the cows reject, and so contribute very materially to keep the turf close and fine. But they are cautious not to overstock in this way, not to stint the cows so as to lead them to fall off in milk, and the number of sheep is usually limited to the number of cows. In winter, the pastures are given up wholly to the sheep at the rate of about one to two or three acres. If the surface is so deeply covered with snow that the sheep cannot dig through it so as to get a living, they are fed with hay in racks morning and evening, near the farm buildings.

By the middle of November the cows are put up, and now begins the active preparation for manuring the pastures. Most of our readers are probably aware that the fields and pastures of Holland are all surrounded and intersected by ditches. These are regularly cleaned out, and they yield a large crop of mud, while through the summer they grow a splendid covering of green weeds and water plants. These are carefully collected and laid along the banks of the ditches in heaps, and so is the mud. You will see long heaps in the form of a rectangular prism, about thirty feet long, and a yard wide at the base, and perhaps six or eight inches deep. The heaps are perhaps sixty to sixty-five feet apart. These heaps lie till the cows go into barn at the beginning of winter, and the air and frosts melt them down, so to speak, into a fine mealy mass.

Now when the cows are stabled at the middle of November, every day, till the ice covers

the ditches, the semi-liquid manure of these animals is boated along the sluggish streams and spread over the surface of these heaps, and the whole is immediately turned over and mixed with the fork, and made up in the form of a triangular prism. This brings the bulk of the cow manure into the centre of the heap. After a time these heaps are again turned until the whole mass becomes light and mealy, a splendid compost, which in January or February is evenly spread over the surface of the pastures, or, if the weather does not admit of it then, it lies over till spring. This takes place on the small ditches running through every farm.

But the mud dug out of the large canals and the numerous branches of the Rhine, is piled in heaps and left exposed to the air much longer, often two or three years, when it is mixed with the semi-liquid manure. Of course the manurial value of the mud of the ditches, canals and rivers, differs considerably according to the location. That taken out near large towns and villages, which receives large accessions from the waste of houses, is much richer than that further away. When the compost is complete it consists of about two parts of manure without straw, to three or four parts of mud, say about half and half The cost per acre of the manuring in this way is about $16.

This system, of course, is not practicable here, but it may serve to show what can be done, and how careful the most renowned dairy people in Europe are to keep their pastures up to the point of highest production, how liberally they are willing to manure, and how abundantly they get paid by carrying a cow and a sheep to the acre, while thousands of our own farmers can hardly keep a small cow to three or five acres.—*Mass. Ploughman.*

Bringing Exhausted Land into High Fertility.

The plan is half a century old—in fact older than that, for it became general in England then. So universally common is it there, that for the last thirty years all the arable land in the country is brought into a rotation which at the end of the course leaves it with the nutriment abstracted, so that there actually is not plant food to produce another crop to pay for harvesting.

This remedy is a crop of turnips which is eaten on the land; and where the farm-yard manure does not hold out and on a great proportion of the outlying land on large farms, some fertilizing substance, such as superphosphate, guano, &c., is drilled in with the turnip seed, and through being in such close proximity with the turnips, they absorb nearly the whole virtue in the application, yet the dung and urine from the sheep act in a manner so powerful that full crops can be grown till in due course it comes round again. In many instances the artificial manure gives the turnips such a start that they absorb the whole of the matter in a few weeks, when the leaves take in support from the atmosphere and perfect a heavy quantity of bulbs, and this is particularly the case on light land.

In the Northern States the weather in the winter is so much more severe as to prevent the eating of the crop on the land after the middle of December, but up to about that time, and from the middle of September, the consumption of turnips can be quite as well done, which is giving ample time to carry out the system. Any one having sheep and an English shepherd would have no trouble in the matter, excepting in obtaining hurdles or a substitute for them, so that the sheep can be daily moved on fresh ground, so as to have their droppings left regularly all over the surface. It would be a great benefit to this country if travelers visiting England would give particular attention to this system, which enables tenant farmers to pay heavy rents, keep up the stamina of the soil, and make much better livings than Americans do who own their farms.

As the population becomes thicker, and farmers cannot run down their land farther or run away from it and get more in the West to serve the same, the exhausted land will have to be farmed in the English style, or there will be nothing but little plot farming—a few acres kept up in tolerable heart at the expense of the rest of the farm, and to any good agriculturist there can be nothing so disgraceful as one portion of any man's land sacrificed to support the rest.

To bring exhausted land into a good state of fertility is one of the easiest proceedings in the world, for if their is no heavy or any manure to be had within a reasonable distance, it is only to obtain a light concentrated kind and grow turnips to be eaten, and the dung and urine will cause any crop to grow after, among which clover can be sown, and

that can be disposed of in the same way as the turnips, or in any way circumstances may demand. Having once re-established fertility, the rotation must be brought to come round often enough to keep up the richness, and endeavor to increase the depth of good soil as well. Where there is good natural grass land, like the Kentucky blue grass region, or any other good natural grasses, it is wise to continue the best portions in permanent pasture and mowing; for be it known, the mixed natural grasses, when managed properly, make hay equal to any on the face of the globe.—There are three-fourths of the farmers in America who have no idea of what a meadow is in England; the term is never applied to aught but old permanent natural grass fields, which lie low enough to be often mowed without injury to the sward. Exhausted meadow land is readily renovated by good grazing, and there is no naturally good grass which by bad management has been reduced and run out, but may be brought back without any ploughing by good grazing with a variety of stock.—*Cor. Country Gent.*

Culture of the Osier Willow.

The osiers will do well without any cultivation after they are once established. I had several lots of them in swampy places, in England, which paid much better than any other land on the estate which I had charge of. We had beds thrown up with the spade, about four feet wide, running across the enclosure—the ditches being about two feet wide and two deep between the beds—each bed having two rows of osiers planted, one near each outside. The weeds were kept down with the hoe till the young plants got strong, after which they fully occupied the ground, smothering everything else. These were sold at auction, and made from $25 up to $75 per acre, according to the crop, the purchasers taking them away at their own expense—the best beds selling for the latter sum. I have seen osiers on a twenty-acre piece of low clay land, (which could not be devoted to any other purpose,) which were planted in beds as stated—the ditches between the beds having water in them nine months out of the twelve—and these have been sold at a much higher rate, but being on a neighboring property I cannot say exactly how much; but their superiority over the osiers I had the management and sale of was owing to their having no other wood of any kind growing among them, as also that no wood or brush had been growing on that land previously, whereas ours had—some growing gorse and some hazel wood, "time out of mind." On the piece alluded to which was so profitable, all that was done was the shoveling out of the ditches after every cutting, and laying the sediment, and any soil worked down in the getting off of the osiers, on the beds among the stumps from which the crop had been cut. Manure or any application besides would be thrown away, and any cultivation after the first year would do no good because in a well-planted osier bed nothing else can possibly grow.—*Cor. Co. Gent.*

Potash as a Fertilizer.

Potash forms one of the most essential constituents of a fertile soil, and one of the most important of all the fertilizing agents within reach of the agriculturist. In many plants it constitutes more than one-half of their ash, and in most at least one-third. In neutralizing acids in the soil and in the liberation of ammonia, it acts in the same manner as lime, but when it is desired simply to effect these last mentioned objects, the latter should be used, as being cheaper, and potash, generally available in the form of ashes, should be applied as a manure, using the word in its strictest sense, to indicate a substance that contributes directly to building up the structure of the plants. But considerable care should be exercised in the use of ashes, and they should never, as is the practice with some in manuring corn in the hill, be mixed with guano or the refuse of the hen roost, inasmuch as the first rain that dissolves them will cause the potash to displace the ammonia in the same manner that lime displaces it from barnyard manure and similar manures, as we have just mentioned; and, although the potash of the ashes and the phosphoric acid of the guano, or the like, would be left to benefit the plant, the ammonia would be dissipated and lost, and the value of the fertilizer depreciated. Analogous to potash in its action is soda, which, however, with a few exceptions to the rule, enters but slightly into the composition of plants, and may generally be replaced, to a great extent, with potash. Turnips and mangold wurtzel, however, require a comparatively large amount of soda, the ash of the former containing upwards of twenty-eight per cent. and the latter a nearly equal amount. This may be most conveniently applied to the soil when required in the form of common salt.—*J. A. Whitney, at Farmers' Club*

The Dairy Business.

At a recent meeting of the Lower Makefield Farmers' Club, (Bucks County, Penn.,) the following remarks on the profitable management of the dairy, were made by one of the members:

"Milk can be obtained from cows of any description, and from that milk butter can be made, but in order to have milk and butter of the first quality and in goodly quantity, it is necessary to have good cows, to give them food which will produce milk of a sweet, rich flavor, and to have a place for keeping that milk of a suitable temperature to raise the cream after standing a proper length of time —three requisites which are very important. Then let us consider first what constitutes good cows, the qualities which have a tendency to produce rich milk, and consequently good butter. There are some of all breeds which possess those qualities, but they are more largely developed in some than in others. For instance, the Alderneys, as a general thing give rich milk, and consequently make butter of superior quality. Perhaps some may say, why not keep the Alderneys? The objections made to them are that they are too small, the quantity of milk they yield is not large enough, and they are not so hardy as our native cattle, requiring more care through the winter. If these objections are sufficient, what is our remedy? If we obtain a cross, what is the most profitable cross to be made? We should cross with breeds which possess large milking qualities, and are well adapted to climate. In my opinion, by selecting cows of milking Durham, and crossing them with the Alderney we should obtain those possessing as many of the properties desired as any other breed. It would increase the quantity of milk, and, although it might not be so rich, it would be so much greater in amount that more butter would be produced than from the small quantity given by the full blooded Alderneys. The size would also be increased, and they would be better adapted to our climate. But some ask will it pay to raise cows? I answer that at present prices it will, and by crossing judiciously we are almost certain to raise good, if not extra cows. I believe it is mostly admitted by those who are engaged in endeavoring to improve the milking properties of cows, that it is better to have them come into profit at two years old, as those properties are thereby developed. The care which cows receive, makes a great difference in their health, and consequently in what they produce, so that to keep them in good thrift, they should at all seasons of the year receive a portion of green and dry food. That is in summer hay should be placed where it will be accessible to them at all times, and in winter a few roots should be given daily with their dry feed. After obtaining this pure, rich milk, I think it is admitted that the place for producing the best and greatest quantity of butter, in summer is a good spring house, where there is a pure, cold stream of water passing constantly; in winter by placing a stove in the same to keep a uniform temperature. I therefore think that to have good milk and butter we must first have good cows, kept on the right kind of food to produce the milk, and a place for setting the milk well adapted to making butter." —*Ex.*

Preparation of Bones for use as Manure.

As some members were anxious to obtain directions for the preparation of dissolved bones, he considered that it would be useful to give some advice on the subject. He would recommend the farmers to adopt the following plan: Place in a wooden trough, or tub, the bones, broken into as small pieces as possible, and pour upon them one-third of their weight of boiling water, and, having steamed the mass so as to render the bones completely moist, add one-third of the weight of the bones of sulphuric acid and common vitriol of the bleacher, and mix the materials completely, by stirring them, by means of a wooden shovel or old spade. The mixture may be conveniently made in an old sugar hogshead, and should be allowed to remain some weeks previous to being used. It may be mixed, if necessary, with dry peat, mould, or real charcoal, or with sawdust; but lime should not be added to it. By carefully following these directions, the farmer may obtain a compound of high fertilizing value, and much superior to many of the specimens of dissolved bones offered for sale. The addition of slacked lime and soapboilers' refuse, which some persons occasionally use, should be avoided. By employing the bones as described, the manure will be found to contain a large amount of soluble phosphate, which very few of the advertised manures afford.—*Dr. J. F. Hodges, at meeting of Ag. Soc. of Ulster.*

The American Farmer.

Baltimore, Mareh 1, 1869.

TERMS OF THE AMERICAN FARMER.

SUBSCRIPTION TWO DOLLARS PER ANNUM.

RATES OF ADVERTISING:

Ten lines of small type constitute a square.

	1 *Mo.*	3 *Mo.*	6 *Mo.*	1 *Year.*
One Square.....	$2.00	$5.00	$8.50	$15.00
Half Column.....	8.50	20.00	35.00	60.00
Half Page.....	15.00	35.00	60.00	100.00
One Page.....	25.00	60.00	100.00	200.00

PUBLISHED BY

WORTHINGTON & LEWIS.

New Office, 4 South Street,

Near Baltimore Street,

BALTIMORE.

About Advertising.—We receive, often, communications like the following from business men. There is nothing to be objected to in the matter of it, nor does it differ materially from notices we often think proper to put in our editorial columns:—*but* it asks us to say that it is "editorial," when it is not, and asks us to receive pay for saying so. On the same day that we receive this, we have another, much longer, with an offer to pay for it any reasonable price.

We know that this is a common business transaction, and therefore take no offence at it, but we wish our readers to know that we do not in this, as in many other things perhaps, follow blindly in the wake of "business" fashions. Every word that goes into our editorial columns is *our own*, which our subscribers pay us for, and all advertisements go to our advertising pages, which our advertisers pay us for. The two are distinctly marked by type and otherwise. Editorial notices bear a comparatively high price, and we might often sell our good opinion at a profit, but on the whole have not thought fit to do so:

"EDITORS' COPY.

"Please publish 'editorial' notice as follows, and send bill of same.

"*Seed Catalogue and Floral Guide for* 1869.—....., the celebrated seed importers and growers, ..., N. Y., have just published their annual "Catalogue of Seeds and Guide to the Flower and Vegetable Garden." This new and valuable work contains full descriptions of about fifteen hundred varieties of flowers and vegetables, with instruction for their cultivation, and directions in regard to the best use to make of them in laying out parterres, gardens, etc. It will be sent free on application to ....., seedsmen and florists, ..., N. Y."

The Florida Union, a valued exchange published at Jacksonville, Florida, has the following:

"THE AMERICAN FARMER.—This monthly has now reached its 50th year, an evidence of its being a sterling and valuable work. The present number for January, has a large number of interesting articles on the farm, garden, fruit trees, manures and domestic economy. We notice with pleasure that it does not pander to the sensational, fancy and speculating mock-farmer, who sells potatoes at a dollar a pound, and fowls at $500 a pair. It is a good substantial paper, and its articles are worthy of cônfidence."

We find in it also, the following very sensible suggestion, applicable elsewhere than in Florida. The *Land of Flowers* is going to be famous for fruits too, as well as many other good things that grow out of the ground, and is one of the most attractive points of immigration in all the South:

"STATISTICS.—Will farmers, planters, and gardeners keep a record of their operations—times and manner of planting, tilling and gathering. We will gladly publish such details, as they will be interesting and instructive to the public. We are now entering upon a new era of agriculture, and the almost entire absence of published information is a great drawback, especially to new comers. By a complete journal of operations kept by several persons, an average result can be obtained, and the results of experience recorded. In this way the economy of farming can be arrived at."

Poole & Hunt.—We call attention to the advertisement of this well established and most reliable firm, and assure those who may need Pumps, Engines of any description, or any thing in their line, that they are not likely to do better than by corresponding with these gentlemen. Their establishment is a Baltimore institution, and has a character to sustain.

Cresylic or Carbolic Soap.

It will be seen by those who read our advertising pages, that Mr. Frank Lewis, who has business connection with the *Farmer*, has the agency for the sale of the Cresylic Soap in Baltimore. We take occasion to say, however, that the proprietors of the *Farmer* have no interest in it, to the value of a copper. We have several times spoken of these soaps, or published articles, as to their valuable antiseptic qualities, &c., based upon what we deemed good authority, and have seen no reason to change our opinion of them. We have seen, indeed, nowhere, anything adverse to what has been said in their favor, except in a late number of the *National Agriculturist*, at Pittsburgh. That journal heads an article "*Cresylic Soap—A Humbug*," and quotes the opinion expressed by F. W. Woodward, of the *Horticulturist*, before the American Institute Farmer's Club, of New York. Mr. Woodward charges, it is said, that the proprietors of the *American Agriculturist* have "advertised and extensively sold this soap throughout the country," and "have induced the public to believe, that the soap was a remedy for every insect ill;" and then adds: "Careful experiments with this soap, prepared of only one-twentieth the strength recommended, resulted in the destruction of the foliage of roses, geraniums, heliotropes and other plants, while the insects infesting them remained unharmed."

We take the earliest opportunity to warn those who may think of using it on plants, to do so with the caution that Mr. Woodward's statement seems to make necessary. But admitting, though in conflict with what has been said by others, that Mr. W. is quite right, there is no occasion that we see for denouncing it as a humbug. Too much has been claimed for it, very likely, but if its antiseptic qualities, its use in the treatment of the skin diseases of animals, in *driving off insects*, &c., remain, the failure *to kill* insects that infest plants is a comparatively small matter.

Farm Implements.—Attention is called to the advertisement of Crossman & Brothers, N. York. Our implement makers of Baltimore, in view of the great demand South for labor-saving implements, would do well to forward to these gentlemen samples for exhibition.

"The Coming Potato."

The Home and Hearth gives an account of a little dinner party in New York lately, of which the editor was one, at which was consumed by a dozen or so of editors, five hundred dollars worth of a single variety of potatoes. What the dinner cost outside of this we are not informed. The five hundred dollars worth consisted of ten tubers, worth $50 each. They were eaten for the purpose of testing and comparing sorts, nominally, but really, we suppose, for the purpose of advertising. The ten tuber kind got the praise of editors of all the leading New York papers, and the advertising given was no doubt cheap at five hundred dollars.

The *American Former*, published at Rochester, gives a communication from an anonymous correspondent, from which we extract the following:

"I notice several items going the rounds of the press in regard to the "coming potato," viz., Breeze's No. 4. one of which mentions several instances of their having been sold as high as $50 for a single potato, and in one instance a cow valued at $60 was traded for one.

"Having returned a few days since from a visit to Vermont, where this, as well as the Early Rose, originated, I have determined to report to you some facts which came under my own observation, believing they will prove of considerable interest to your agricultural readers.

"It is well known that Mr. Breeze, the originator, has several bushels of the No. 4 on hand. He refuses, however, to dispose of them and has paid large sums to secure the product of the few which he carelessly gave away two years ago. I saw a neat cottage house, entirely new, and half an acre of ground located in the heart of a flourishing village in northern Vermont, valued at $2.000, and I should judge it well worth the money, which the owner offered, free and clear, to Mr. Breeze for 7 lbs. of this variety, and was refused. I was also shown two tubers which a young farmer exhibited, for which he paid $200 in greenbacks. These two instances I know to be strictly true, and are probably the highest quotations on record for potatoes. Mr. Breeze claims that No. 4 is more prolific and a better table potato than the Early Rose, and fully one week earlier. It is probable that very few, if any, will change hands until after the next year's crop is harvested, and the farmer who may be lucky

enough to secure a few may realize a small fortune."

The writer rejoices in the disposition among farmers "to experiment with the new and improved varieties of seeds and plants."

"I am glad," he says, "to notice the development of this disposition, for it not only enhances the value and resources of the country, but elevates and dignifies agriculture."

Our young name-sake does not seem to suspect this to be an advertisement, but puts it free, of course, among his reading matter. He has a zeal for the elevation and dignification of agriculture!

Fences and Fence Divisions.

There is much discussion going on among Pennsylvania farmers relative to the fence law, says the *Weekly Press*, and the State Agricultural Society has determined to urge the Legislature to repeal the fence law, which now allows all cattle to range without restriction. It seems to be supposed that the repeal of that law and the consequent obligation upon every owner to keep his stock within bounds, would do away with the necessity for a large amount of fencing.

The law of Maryland is not, we believe, uniform in this respect, the several counties having different regulations. In Anne Arundel county, where every man is required by the law to take care of his own stock, we do not think it has had the effect of diminishing the fences. For some reason or other, by general tacit consent, every man fences his farm and protects himself, as if there were no such law.

The Press, in the comments, has the following:

"Again, it is to a farmer's interest to have fences, especially if he has stock to pasture, which all more or less have. The best system of farming ever will be that which is mixed up with stock and grain-raising; and in such systems of farming division fences are essential, especially so in dairy farming, where the smaller the lots for cow pasturing the better; for we all know how joyously a cow goes to a change of pasture, and how great the benefit from this frequent change. Then the protection from other trespassers than cattle, the shelter from cold winds, and other advantages of fences are so great, that it is clearly to the advantage of every farm to have them; and, if so, they may be as well made as the law now requires them to be."

Now we very much question whether there is such necessity as is here claimed for division fences, on account of the mixed husbandry of stock and grain. The old idea of the value of a frequent change of pasture for stock does not now, we know, hold with many experienced graziers. We think that a given surface of pasture ground for a given number of cattle would gain nothing by being divided off into lots.

Whether it be necessary or even desirable to submit the fields at one time to grain and hay and another to pasturage, may also be questioned. Why not have all the arable ground within a single enclosure, with a suitable rotation of grain, clover and grass, and all the pasture ground, except a small lot for convenience near the stables, in another enclosure. Such an arrangement would save much fencing.

Shenandoah Valley Agricultural Society.

The Winchester News publishes the proceedings of a meeting held at that place in January for the purpose of framing a constitution, &c., for the agricultural society of the title given above. Col. J. W. Ware, of Berryville, presided. Besides other business appropriate to the occasion, a committee, composed of five from the several counties interested, was appointed to take subscriptions for the benefit of the association. The Chair appointed the following gentlemen for Frederick county, Charles L. Wood, R. L. Baker, Jas. C. Baker, M. R. Kaufman and J. H. Burgess; for Clarke county, J. H. Bitzer, U. L. Boyce, J. W. Luke, D. W. Sowers and Beverly Randolph; for Shenandoah county, George A. Hupp, Col. J. S. Pifer, Israel Allen, Dr. Jos. Strayer and O. C. Billings; for the town of Winchester, R. W. Hunter, C. W. Price, J. H. Kemp, C. W. Reed and N. Solenberger.

☞ We are much obliged by the communication of our friend "W." on the Lespedeza Striata. The manner in which it has been pressed into notice, made us a little shy of it. We are glad to believe it is all right.

☞ Our correspondent at Chestertown will find his inquiries of last month kindly answered by Mr. Hansen, to whom our pages are indebted for many favors.

Notices.

The *Prairie Farmer, Annual Agricultural and Horticultural Advertiser*, is another of those useful little compends of valuable material, several of which we have noticed. It is issued from the office of one of our most valued exchanges, the *Prairie Farmer*, at Chicago, a journal whose very handsome improvement at the beginning of the year indicates its increasing and well deserved popularity in the great West.

Southern Agricultural Journals.—We acknowledge our remissness in failing to make special notice of several new and valuable agricultural publications, which are published in the Southern States.

The Carolina Farmer is the title of a journal resembling in general style and form the American Farmer, though somewhat embellished, as becomes its youth, and ably edited by Wm. H. Bernard, chief editor and proprietor, and Robert K. Bryan, associate editor, and devoted to the agricultural interests of the two Carolinas. It is published at Wilmington, N. C. $2 per annum, in advance.

The Dixie Farmer, is a weekly, published at Nashville, with great spirit and ability. There is no publication of its class in the country that bids fairer for a career of usefulness and success. It is published by Paul, Tavel & Hanner, and edited by Hunter Nicholson.—Price $3 per annum.

Practical Floriculture, is the title of a little work from the press of Orange Judd & Co., 245 Broadway, N. York, and is intended as A Guide to the Successful Cultivation of Florists' Plants, for the Amateur and Professional Florist, by Peter Henderson, author of "Gardening for Profit." We take Mr. Henderson to be a good Guide in what he teaches, and the publishers have done his work justice in paper, printing and illustrations.

Hovey's Illustrated Catalogue and Guide to the Flower and Vegetable Garden for 1869.—The catalogues of the present day have got to be elegantly illuminated annuals, as full of beauty as of useful instruction, as this of Mr. Hovey's shows. Price 25 cents. Hovey & Co., Boston, Mass.

We have also from Mr. H., Transactions of Mass. Horticultural Society.

Amateur Cultivator's Guide to the Flower and Kitchen Garden, containing a descriptive list of two thousand varieties of flower and vegetable seeds, &c., from Washburn & Company, seed merchants, No. 100 Tremont street, Boston.

Deitz Experimental Farm Journal is added to our monthly exchanges, a magazine of useful matter, especially in regard to seeds of grain and grass, of which Mr. Deitz has made a specialty on his experimental farm near Chambersburg, Pa. $1.50 per annum.

Descriptive Catalogue of Flower Seeds, with Practical Directions for their Treatment, by Alfred Bridgeman, grower, importer and dealer in vegetable, grass and flower seeds, 878 Broadway, N. Y.

Annual Trade List of Cherry Hill Nurseries, West Chester, Penna. Hoopes, Bro. & Thomas. 1869.

Catalogue of Fruit, Ornamental and Evergreen Trees, at the Burrough's Nurseries, Waltham, Vermont.

Catalogue of Bricksburg Nursery, Galkins & Brooks, Bricksburg, Ocean Co., N. Jersey.

The New Eclectic Magazine.—The March number of this admirable Eclectic is received just in time to say, that it seems to improve on every issue. That popular Southern magazine, *The Land We Love*, of Gen. Hill, is to be united with the Eclectic in April. Turnbull & Murdock, 54 Lexington street.

The Galaxy, for March, is prompt as usual, and full freighted with its cargo of the best magazine material. Sheldon & Co., 498 and 500 Broadway, N. Y.

Edw'd J. Evans & Co, York, Pa.—We have from these gentlemen their Catalogue of Field and Garden Seeds for 1869, in which we find they have made arrangements with Mr. Vick of Rochester, to furnish his famous seeds at his own prices. Catalogue free.

The Orange Judd Wheat.—See advertisement of this wheat, of which we have a very handsome sample in our office.

"Sterility is Laid." Prof. Ville's New System of Agriculture. See advertisement.

For the "American Farmer."

Japan Clover.

MESSRS. EDITORS: Ever and anon the country is electrified with some new discovery, which it is claimed will be of *lasting* benefit. In most instances it frets out a brief hour, and makes room for a successor said to be yet more valuable. Such, in the agricultural world, *were* the morus multicaulis, the Rohan potato, and such like. Will it be so with the Japan clover, botanically the Lespedeza striata?

I have no personal experience in the growth or culture of this plant, but have taken some pains to inform myself as to its real value, and with your consent will give to your readers, through the dear old Farmer, the results of my examination, so that each for himself may draw his own conclusions.

I will premise with saying that I have no seed to sell, and am in no wise interested in its general spread beyond the natural desire "to do good unto all men."

My attention was first drawn to it by an article which appeared last fall in the Southern Planter over the signature of T. S. W. Mott, and by subsequent articles which appeared in the Farmers' Gazette—one by Dr. Mott, one from a gentleman in Georgia, and one from a gentleman in Virginia. The latter two write with great caution, and have no seed to sell. Dr. Mott writes enthusiastically and has seed to sell. Naturally I took the doctor's statements *cum grano* until I was enabled to establish the weight which should be given to his testimony. Upon a rigid enquiry I am certified by testimony of the most reliable character that Dr. Mott is entitled to the most implicit confidence of his countrymen. He is an Episcopal clergyman, and has the entire respect of his brother clergy and the warm regard of all who know him. Thus much to clear the doctor's skirt of bias in behalf of this new plant.

Its first value is that it will flourish where other grasses will not grow. I have seen samples of five inches in length, of a growth from March to September, from land which had been abandoned for its poverty, sown without any previous preparation of the land.

2. It spreads rapidly and covers the ground as with a mat, thereby shading the land and protecting it from the scorching rays of the sun.

3. It produces an herbage second to none for stock.

4. Though an annual, from the multitude of its seed it re-seeds itself.

5. It, on rich land, grows to the height of red clover, and makes a hay exceedingly palatable to cattle, sheep, &c.

6. It will eat out sedge grass and brown straw and all other pests.

7. Land may be seeded to it at less cost than with any other grass.

These are the main points claimed for it by those who have tried it themselves or seen it tried by others.

A very distinguished gentleman from North Carolina, in speaking of this clover, said that where it had been introduced into his State it was regarded as a great blessing; that beef and mutton fattened on it would compare with any in the world; and a lady from the same State, near the South Carolina line, styles it a "godsend."

It is not fit for winter pasturage, being easily killed by frost, and therefore will not be a substitute for white clover and blue grass. It will hardly be supposed that any one would sow the Japan on fields already sodded—its pre-eminent value being its adaptation to lands now too barren to produce pasture of any kind.

Now, sirs, if that man be entitled to honor who can make *two* blades of grass grow where only *one* grew before, how much should he deserve who will show us how to grow *many* blades where *none* grew before?

I suppose by next fall seed will be plentiful and sufficiently cheap to enable every owner of a poor field to purchase a little for experiment.

There is another good point in the Japan clover, and that is, that it is perfectly easy to get rid of by a single ploughing.

And now a word to the old Farmer. Good friend, I mourned with you in your troubles, but I rejoice now the more greatly in your prosperity. You are engaged in a noble work, and right worthily do you perform your task. God speed you and prosper you abundantly, and long continue you as a blessing to our own dear native South. W.

Virginia, Feb. 4, 1869.

Allen & Needles.—We call attention to the advertisement of this well known Philadelphia firm. They have no agents, and buyers must deal directly with them.

For the "American Farmer."

How Much Stock for a Tenant.

MESSRS. EDITORS: In your January number I notice that one of your readers desires information, through your paper, "as to the proper number of cattle a tenant should be *allowed* to keep on a farm of 500 acres, say, tilled on the five-field system, each field averaging 60 acres; also, how often and at what rate a farm so tilled in wheat and corn should be limed, after it has had two good dressings in the last ten years?"

A tenant should be allowed to keep as many cattle as he is able to feed *well;* aye, he should be compelled by contract to keep a sufficient number to consume ALL the forage grown on the farm. It is the mutual interest of both parties, landlord and tenant. Larger number of stock produces larger amount of manure, and larger amount of manure, larger crops; in fact, where sufficient stock is kept, the manure properly taken care of and increased, and where it is applied judiciously, both parties *must* derive the desired profits and the farm increase in value. To say *positively* how many head of cattle a tenant ought to keep on a farm as described above, is not possible. It depends on circumstances; for instance, the quality of the land and the mode of feeding. If the rotation (on good land, well cultivated) is such, that two fields are in clover and the cattle are *pastured*, he ought to keep *thirty* head of milch cows or steers, and raise four head annually to keep his stock up, provided the surplus 200 acres do not furnish any food except some little pasture. If the cattle are *soiled*, there ought to be kept *forty* head, besides the increase.

With regard to liming, I consider a coat of 40 bushels per acre, applied every five years, when the rotation begins, as much as any land can stand. Of course, lime has *always* to be sustained by a *proper* amount of manure; if not, lime will ruin the land, except if, after the application of the lime, clover is sowed, and the land allowed to lay in clover for a couple of years. Where lime is repeatedly applied, *deep* culture is required.

Thus I believe I have given the desired information, but I cannot finish without calling your attention to the principal factor of successful farming, DRAINAGE, and, if possible, *subsoil* drainage. Strain every nerve, subject yourself to privations, if you cannot effect it otherwise—a *short* time will repay you *amply*, and the improvement, if well made, will benefit you for life. L. A. HANSEN.

Clifton, Fairfax Co., Va., Feb., 1869.

Poultry Raising in England.

An English paper gives the following account of an extensive poultry raiser:

"Formerly, Mr. Bagshaw reared a large number of turkeys, but the demand for geese so increased that he confines his Christmas business to the latter birds, still, however, continuing a general trade throughout the year. In the course of twelve months he produces from 60,000 to 70,000 fowls, of which about 30,000 are ducks, principally of the Norfolk species. About the last week in October the 'buying up' is the first preparation for the Christmas sale, more than one-half the number required being obtained from Holland, and the remainder from various parts of this country. The fatting commences about the middle of November, and the largest number fatted at one time is 12,000—the number fatted this winter. The food on which the fowls are fatted is barley meal and brewer's grains, the former being ground by Mr. Bagshaw himself, so that he may not be exposed to adulteration which this commodity frequently undergoes; and the quantity of food required is about 360 bushels of barley meal and 60 combs of grain daily. The manure from such an immense number of fowls, fed upon such a description of food is very valuable, and frequent applications for the sale of it are made; but as Mr. Bagshaw holds a farm close by his poultry yard, he prefers to make use of it himself. It takes about six days to make preparation for the market, and about 100 dressers are employed in the work, but as the birds are not drawn before they are sent to the market, the giblets are bought with them. Of those killed for Christmas, some 4,000 are sent to the goose clubs, and the rest are forwarded to the markets at Leadenhall and Newgate, where they are sold on commission. During Christmas last, no less than from 70 to 80 tons weight were sent away from Norwich by rail, the geese averaging from 9 to 16 pounds. Last year some weighed as much as 22 pounds; but, as a rule, the birds were not so fine this year. The feathers realized from the lot of 22,000 amounts in round numbers to 4,000 pounds; the quills and waste feathers being kept separately and sold by themselves."

Home-made Fertilisers.

We are indebted to the *Maryland Examiner*, Annapolis, for a portion of an address of Professor Higgins of the Md. Ag. College, delivered before the Agricultural Society of Anne Arundel Co., in which he recommends strongly to farmers, the preparation of their own Superphosphates, as follows:

"The quantity of acid to be used when bone dust is to be converted into Superphosphate of Lime is, in round numbers, twenty-nine pounds to the one hundred pounds of bones. This quantity would convert all of the Bone Phosphate of Lime into Biphosphate of Lime, but much observation has led me to doubt if this be the most economical quantity in practice, and I would therefore recommend that a less quantity than this be used, say from four to five hundred pounds of acid to the ton of Bone Dust. It is true that this is not sufficient to make all the Bone Phosphate of Lime a Superphosphate of Lime; some will remain undecomposed, but this will more slowly become soluble by the action of water in the soil impregnated, as it necessarily must be, with carbonic acid and by the presence of ammoniacal salts, present in all soils, and in greater quantities where Peruvian Guano has been drilled with the seed at the time of sowing than elsewhere.

"The bone dust not acted on by the sulphuric acid will thus afford a supply to plants in the latter stages of their growth, and, if not all consumed by the crop to which it is applied, will be in most fit state and condition to benefit succeeding crops.

"If the Navassa Guano be used, from four to five hundred pounds of common salt should be *well mixed* with it before the acid is applied. If you gentlemen possessed any certain means of ascertaining the composition of the different Guanos sold in our market without having the analyses made for yourselves, I would give you precise directions as to the quantity of acid to be applied to each in order to render them soluble as superphosphates; in the absence of this knowledge, you should use from four to five hundred pounds of the acid to the ton (2000 lbs) of Bone Dust or Phosphatic Guano. In the selection of this Guano (if you cannot or will not use the Bone Dust,) take every *possible* precaution to purchase that which contains as little of the Carbonate of Lime (Air-slaked Lime) as possible. When the Guano contains this, your acid will be expended in converting this into the Sulphate of Lime (which can easily, as you know, be cheaply purchased in the markets) before it begins to form the Superphosphate of Lime; the substance which you are desirous of making.

"So far as to the substances required to make a Superphosphate. I now propose to give you plain and precise directions for handling and mixing the substances of which it is made. If there be any doubt as to the directions or any want of clearness in the way in which I have give them, I will, with pleasure, give every additional information in my power if applied to in person or by letter at the Md. Agricultural College.

"MATERIALS TO BE USED.—Bone Dust finely ground one ton (2000 lbs); Oil of Vitriol four hundred (400) pounds. Take the Bone Dust and place it in two or three heaps on the floor of a tobacco house, barn or shed, any place where the rain will not fall on it, and moisten the Bone Dust with water until it is quite damp. Then take the Sulphuric Acid (oil of vitriol) and pour it on the Bone Dust. As soon as this is done, the heaps should be well stirred with a wooden shovel or paddle. As soon as the acid is applied, a good deal of heat will be produced, and watery vapor will fly off from the heap. The heap should be well stirred every day for about a week, and then suffered to remain until it is wanted for use. It then should be again two or three times well stirred; and if there be any lumps or pasty masses in it, these should he mashed with a rammer or in any convenient way, and be reduced to as fine a state as possible. From exposure to the air and by the heat generated by the application of the acid, the mass will be dry enough, (if made for a few weeks) to be handled and applied broadcast to the soil.

"If it should be too damp to be well applied, then mix with it some dry sand, wheat chaff, corn bran, sawdust or some such substance, but *not* ashes, nor lime nor plaster.

"Should Bone Dust be unattainable then procure some of the Phosphatic Guanos, but the supply of Columbian and Mexican, the best of this class, are almost, if not entirely, exhausted. You may therefore procure the Navassa Guano, which can be had for about eighteen (18) or twenty (20) dollars per ton, and of this Guano the great majority of the Superphosphates have been made, and for

which you have been paying at the rate of fifty-five (55) and sixty (60) dollars per ton.

"Take one ton of it (2000 lbs), mix intimately with five (5) or six (6) hundred pounds of salt, then treat it as you have been directed to treat the bone dust i. e. add slowly and cautiously from four to five hundred lbs of the oil of vitriol, first moistening the mass, stirring it well so as to make a uniform and thorough mixture, and you will have a Superphosphate at the cost of less than thirty (30) dollars per ton, at least equal to many of those for which you have been paying from fifty (50) to sixty (60) dollars per ton, and very much superior to some of them. Be not discouraged if you do not succeed in making a *good looking* article at first; if you comply with the directions given, you will have made a *good* article. You will have your Phosphate of Lime in a *soluble* condition, and that is the *end* and *aim* of making a Superphosphate.

"When the Superphosphate of Lime is applied to the soil, the first rain dissolves it and distributes it thoroughly in the soil, where meeting with particles of lime in the condition of air slacked lime, it unites with it, forming again Bone Phosphate of Lime, but in such a fine state of division as to be readily soluble by agencies acting on it in soils. The finer the state of division the more thoroughly a manure can be mixed with the soil and the greater will be its efficacy; and be certain of this, that in this first respect the finest ground bear no manures compared with the Superphosphate of Lime. Instead of putting your Bone Dust or Guano in a heap, you may mix it in a wooden trough, like a cider trough, or if you have a tough, strong clay, dig a hollow pit in it, and apply the acid as I have directed. Be careful in handling the acid, as it will burn the flesh or destroy the clothes, when it comes in contact with them. It can be poured from the carboys, which it is brought in, to any kind of crockery vessel having a handle for convenience, and thus be used without any fear of injury.

"I know of persons in the State, the best and most successful of our farmers, who have been making their own Superphosphates for years with entirely satisfactory results, and at a cost, *labor included*, not greater than that which I have mentioned. *Use no other substance with your superphosphates other than those which I have mentioned.* To your grain apply your Superphosphate of Lime *broad cast*, and *drill* in withy our grain from seventy-five to one hundred pounds of good Peruvian Guano. To your corn and tobacco a small quantity of Peruvian Guano in the hill, not more than fifty (50) pounds to the acre, with the Superphosphate broad cast on the land.

"By doing as I have mentioned, you will have a manure equal to the best that is now sold and at a far less cost. Again I say, be not discouraged at any *seeming* want of success in your first attempt, for it will be more in *appearance* than reality; but persevere. In the end you will come out right, and reap the reward of your labor in your crops and improved land; in the greater certainty of using a finer manure, at far less cost, than you now employ. Again I say, that if any difficulties present themselves in your manufacture, I will, with pleasure, afford you all of the assistance in my power."

CRESYLIC SOAP.—"Please give in the *Turf, Field and Farm* some directions for the use of cresylic soap on sheep with scab; can it be applied safely now, so soon before lambing, or would it not be better to wait until after shearing? And also how must they be washed and how often?" Such is the query recently received from a valued friend in Maryland. With his letter in hand, we sought out Louis Robbins, Esq., who knows more of carbolic acid than any man alive, and who, by its application to wood in the form of vapor, has made one of the most valuable discoveries of the age. Mr. Robbins directs the scabby spots to be washed with the soap immediately, as the disease spreads rapidly—the only danger to the ewes he thinks will be in the handling. After lambing they must be looked over again and, if necessary, washed again. The scab is caused by an insect which is killed by the application of the soap, which is only another form of carbolic acid—which, applied by the process of the Wood Preserving Company, renders the most perishable woods as indestructible as iron.—*Turf, Field and Farm.*

A bluff old farmer says: "If a man professes to serve the Lord, I like to see him do it when he measures onions, as well as when he hollers glory halleluyer."

If you would have your apples and vegetables keep well, take advantage of every mild day and freely ventilate your cellars.

Cotton and Tobacco.

The daily and weekly press of the South is giving unusual attention to agricultural interests. This is natural, for these are the all, almost, of Southern wealth, and it is wise, because there is great and manifest need for the use of all the brains that can be commanded to direct prudently and skillfully the work of agricultural reconstruction. We treat with deference always the opinions of intelligent men living on the ground, and in the midst of labors they aim to throw light upon, yet we sometimes notice in their reasonings the prevalence of certain thoughts that have gained currency in agricultural journals, and are fashionable, with as little reason underneath them as have the common fashions of the day.

One of these is, that there is a necessary connection between tobacco or cotton planting and the wearing down and poverty of the farm. "In the planting States," it is said, "the process of deterioration is continually going on." The Weekly index, of Petersburg, after comparing the price of the rich lands on the James river with that of the improved but naturally poor lands of New Jersey, says: "Such has always been, and always will be the contrast between farming and planting. Indeed, we have no need to go outside of our own State to see it fully illustrated. In the Valley, and in the Piedmont counties, we see numerous farms highly cultivated, with ample barns and comfortable dwellings, fine stock and dairies, orchards, meadows and everything to add to the well-being and profit of the owners. Every year the land rises in value, and is made more productive." This happy condition is contrasted with that of the planting country, and regret is expressed that "Southern planters persevere in making these staples their leading crops."

The Index is by no means insensible of the great value of these staples, for it says in the same article: "Cotton and tobacco, though exclusively Southern staples, are doubtless of immense national importance. More than all things else have they contributed to equalize exchanges and save the country from the effects of monetary revulsions. But they have added far more to the aggrandizement of the North than the South. Stricken out from the list of agricultural productions, a return to specie payments would be postponed indefinitely." All this is true, and shows very plainly that in these great staples the South has an element of wealth and power which she cannot afford to dispense with. Certainly she will not throw them aside in her present need, nor should at any time, until it is very plain that something better can replace them.

Are there crops that can be substituted for these with profit? Can wheat and corn, the most profitable of grain crops, take their place? Corn, while no farm should fail to supply its own consumption, is one of the poorest of market crops. Wheat, except on lands naturally or artificially very fertile, is subject to numerous ills, and is exceedingly uncertain. When the tobacco and cotton lands are compared with those in the valley, and farming as it is seen there commended, it should be remembered that in the latter the land is not only fertile naturally, but it is peculiarly suited to grain and grass growing. There is still less hope of making grass a substitute, whether taking the form of hay, meat, wool, butter, or cheese. More suitable lands for these products, and nearer to the markets, will come in competition.

The cultivation of fruits of various sorts should indeed be by all means encouraged, but a change to these is, in the first place, a matter of time, and then they will prove only a very partial substitute. The growth of vegetables is profitable when a good market is convenient, but how far are the cotton and tobacco fields away from these great markets! The peanut is grown profitably within a certain limit, but cannot become a great staple. The *Ramie* may in a measure take the place of cotton, but that remains to be seen. The sweet potato will become valuable, if it can be dried by the new process, for export. Thus taking the range of all possible crops, it will appear that there is nothing that can be relied on for the purpose in view; nothing equals cotton or tobacco.

The advantage that these have is first the yield per acre, and the facility of transportation. A thousand pounds of tobacco at 15 cents is worth $150. Supposing 30 bushels of wheat could be grown on the same ground, which is doubtful, it would weigh 1,800 pounds, costing nearly twice as much for transportation, and bring in market, at $2.50 per bushel, only $75. Corn would make a much worse show in the comparison, and

both would show worse as compared with cotton.

Then it is in their favor that the modes of cultivation and management of these crops are thoroughly familiar; no time is lost in experimenting. They cost nothing for seed. It will be said on the other hand, that these crops need much more labor. Making the comparison between tobacco and wheat, it will appear that the difference in this respect is not really so great as is supposed. First, two acres at least are to be allowed for the same value of wheat that we get from one acre of tobacco. The preparation involves double the cost then for the ploughing, harrowing, manuring, &c., while for the tobacco there is extra cost in the final preparation for setting the plants, and more labor in planting. For the mere pitching of the crop, one may perhaps be set against the other. For the harvesting, or saving from the field, the tobacco has the advantage materially. The labor of cultivation is not heavy work, and may be done mainly by half-grown boys or women. The work of preparation for market is mostly light, and can be done leisurely through five or six months.

If it seem, then, that these crops are the most available and the most profitable as staples, and it is very desirable for all other reasons that their cultivation be continued, it becomes a question of great interest to determine whether their cultivation be consistent with that preservation and improvement of his estate that common prudence demands of every farmer. We think it is. We think "the process of deterioration continually going on in the planting States" is not the fault of the planting, but of the planters, and of the faulty system they follow. We have known plantations of tobacco with crops ranging from ten to a hundred acres annually where there was not continual deterioration, but rather improvement, and we think the difference between these and those described in the Index may be accounted for. Here is what the Index says of the course of cropping in the South:

"When one field of virgin land is exhausted by cotton or tobacco, recourse is had to the forests for another to take its place; the former one is subjected to a few years' tillage in grain crops and then left to be occupied by old field pines."

In those which we refer to the course was as follows: The crop was planted on a sod well turned in early spring, and manured and ploughed again for planting in May and June. It occupied the ground three months. Wheat was immediately sown, and cloverseed the following spring. The wheat came off in July, and left stubble and stubble-weeds and clover in possession. The spring following the clover had exclusive possession, and was not interfered with till the bloom appeared. It was then neither mowed nor grazed, but trampled by just enough stock to serve this purpose, moderately fed upon through the season and ploughed again for tobacco next spring. Thus, under a three-field system, there was an interval, between the coming off of the wheat crop and the breaking again for a tobacco crop, of twenty months, with a heavy growth of clover and a crop of weeds not turned under, but lying on top during much of the time. To make it still better, four fields might have taken the place of three, and sheep fed upon the fourth year's growth.

Now, we maintain that this is not an exhausting nor deteriorating process, yet this is the beginning and end of tobacco cultivation. How, then, are tobacco plantations worn down? By bad management and bad systems of cultivation. By such a process as that described above. Nothing could be more effective, but why charge it upon the tobacco? Let the planter have the credit or the discredit, and when a remedy is to be applied, make the application to the soft part of his skull. Now, if we may make a suggestion, it is this: Let those who understand the cultivation of these great staples, and who can command laborers who understand it, and who have suitable soil and climate, continue them as their staples. Let them refrain from pitching big crops, but limit themselves rigidly to moderate crops in proportion to the labor employed. Plant on land very rich or very heavily manured. Follow with wheat and with cloverseed. If clover will not grow, sow rye, or oats, or whatever will make a heavy covering, and have stock to tread it down, that the surface may be covered, and remain so as long as it is to be out of use. It will serve a useful purpose for grazing, but not until the first heavy growth has been trodden down for a covering. When the field comes around again, repeat the process, ploughing early, and manuring heavily before

planting, to make the most crop per acre. It will not be of as fine quality, but will bring more money. To manure heavily is costly indeed, but will it not pay, and pay abundantly? It is such crops as tobacco, yielding largely per acre, and bearing well the heaviest manuring, that we can spend money upon with confidence, provided we do not fail to follow with an improving crop.

But there is no need that this crop should monopolize all the care and means of the planter. Let him raise corn, and meat, and fruits, and vegetables, for his own consumption, and these with a crop of wheat should come near to paying all working expenses, and leave his tobacco crop clear.— *Weekly Sun.*

Cooked Food for Swine.

My first experiment was with old corn, in three forms, viz: shelled and fed whole; ground and made into slop with *cold water*; and ground and *thoroughly* cooked.

The pigs, five in number, were from the same litter, and were the produce of a good common sow crossed with a Berkshire boar.

In each case the food was given them as fast as consumed, and all possible care taken to avoid any waste or irregularity of feeding; in every case of a change of food three days was allowed before the weighing for the experiment, in order that the effect of a *sudden* and *entire* change of diet might not affect the result.

I found that five bushels of whole corn made 47¼ lbs. of pork. Five bushels (*less miller's toll*) of corn, ground and made into thick slop with cold water, made 58¼ lbs. of pork. The same amount of meal, well boiled and fed cold, made 83¼ lbs. of pork.

With the whole corn the pigs had the slops from the kitchen (*no milk,*) and for drink with the boiled mush, one or two quarts were thinned with cold water or slop from the house; in each case the house slop was used in some form or other, but all the milk was reserved for small pigs. The fifteen bushels of corn cost $1.30 per bushel; and thee will notice, that while the pork made from the whole corn *barely paid for the corn*, that from the same amount of ground corn cooked, paid the whole cost of the corn and a little more than *one dollar per bushel* over, and that the economy of grinding and making into slop will fully warrant the extra trouble and expense. How could it be otherwise, when the whole economy of profitable feeding consists in bursting or breaking the *indigestible* hull which encloses the *minute* particles of food?

In the above experiment the data are based upon pork at $14 per cwt., and corn at $1.30 per bushel; but it will apply as well to other prices.

The second experiment was exclusively with new corn, in two forms, viz: on the ear, and shelled and ground before boiling; and all in each case was what we know as "nubbins" or soft corn. The best of this class of corn was reserved for the pigs and the worst fed to the cattle. Ten bushels on the cob made 29½ pounds of pork, fed in the usual way, on the ground. The same amount shelled, ground by horse-power, and well boiled, made 64 pounds of pork. Of course a portion of that fed on the ear was wasted; but it is the common plan, and forms but a fair test of the comparative merits of cooked food. I have made no experiment with sound new corn, but may have a favorable opportunity before the season is past; but would suppose that my experiment with old corn would form a good criterion to judge by.

Thee asks for any indirect points which may have been noticed during the experiments. I have found that there is economy in allowing the food to become thoroughly *cold* before it is fed; that in this state a larger amount will be eaten, with more apparent good appetite; that while scalding is beneficial, *thorough* and prolonged cooking *under pressure* is more economical. In more than one case I fastened the lids of the barrels down until the pressure was as high as five pounds per square inch in the barrel and steamer, and an examination into the condition of the food convinced me that its globules were thoroughly bursted, and it was all or nearly all *rendered available.* During a given time the same pigs will consume rather more corn cooked than uncooked.

Having eaten various portions of one of the above pigs, fed almost entirely on cooked food (*fed cold*), and having assisted in killing all of them, I must say that the prevalent idea that the meat of such a pig is not as firm as if fed upon uncooked food, has proven in my case to be erroneous—though I am not prepared to say what the result would have been had the food been used while warm or hot.—*Cor. Practical Farmer.*

The Prevention of Disease.

It would, indeed, be an admirable arrangement, alike for humanity and for the lower creatures of creation, if the aches and ills which escaped from Pandora's mythic box could be again secured, and locked up beyond all chance of fattening on health and life.—To hunt down and exterminate some of the ills that flesh is heir to is perfectly feasible. Others, we fear, must be accepted as part of the primeval curse. Many ailments, such as those of a scrofulous character, have become very firmly implanted in the animal system; they have assumed hereditary powers, so marked that generations would elapse before their subtle remains could be thoroughly eliminated. Another large class of disease, alike in men and animals, spring from the external circumstances amid which living creatures are placed. Extremes of cold and heat, sudden changes of temperature, overcrowding, and hard work, sap the vigor and jeopardise the health of thousands. Under more careful management, disorders of their class, although they cannot be altogether done away with, might evidently be materially diminished in number and severity.

The disease which we may confidently hope entirely to blot out, are those which result from contagion. Lord Robert Montagu has stated that since 1842 one million and a half of cattle have been destroyed in Great Britain and Ireland by contagious diseases. The specific organic poisons or contagions which the poison can fasten may be kept beyond its reach, and thus it is killed, as it were, by starvation; or the poison, as rapidly as it is evolved from the sick or infected creature; is neutralized or robbed of its vitality by disinfectants. As our readers well know, the cattle plague, which is probably the most virulent of the contagious disorders of animals, was in this way banished from our shores.

We would gladly apply the like principles to the prevention of other disorders. But this cannot be done effectually with deseases which, like cattle plague, are propagated mainly or entirely by contagion. In the human subject, the diseases depending upon contagion alone are more numerous than in the lower animals. They include small-pox, scarlet fever, and other eruptive complaints, with the worst class of typhoid and typhus fevers. The eruptive fevers more especially are not productive except by contagion only. In the lower animals the chief contagious diseases which have occurred in this country are cattle plague, cow-pox, and sheep-pox, strangles in horses, hydrophobia, in dogs, with the pleuro-pneumonia epizootic in cattle, mouth-and-foot disease in cattle, sheep, and pigs, and glanders and typhoid fever in horses. But unfortunately for our success in extirpating these diseases, they do not, like cattle plague, cow-pox, or variola ovina, invariably spread by contagion alone. Under certain conditions they appear to be developed *de novo*. Overcrowding is stated to produce mouth-and foot disease. Exposure in railway trucks, or in unsheltered pastures during severe weather, is believed to develop pleuro-pneumonia, and such cases subsequently assume contagious properties, and become the sources of extensive diseases. Glanders in horses more frequently depends upon close foul stables, bad feeding, colds, or overwork, than on contagion or inoculation. Gastric fever and influenza amongst horses, although occasionally spreading by contagion, are more generally traceable to other causes, and form a sort of connecting link between contagious and non-contagious diseases.

Considerations such as these increase the difficulties which stand in the way of our summarily getting rid of diseases like pleuro-pneumonia and foot-and- mouth disease. Mr. Barclay, Aberdeen, in his sensible paper, read a few weeks ago before the Scottish Chamber of Agriculture, proposed that efforts should be made to stamp out the pleuro-pneumonia epizootic in the same way as was successfully done with the recent attack of rinderpest, by slaughtering all animals affected, and by a local assessment providing compensation for the stock thus destroyed. Mr. Barclay states that the average loss of animals attacked by pleuro reaches from 80 to 90 per cent This is much overstated: under rational management one-half of the cases attacked should be saved. But even with this larger proportion of recoveries, it is certainly sound economy at once to slaughter the first cases that appear in any herd, and by segregation and disinfection, endeavor to arrest the further spread of the complaint.

The notable reduction in the ravages of pleuro-pneumonia, and also of mouth-and-foot disease, during the prevalence of the cattle plague, and whilst the movements of stock were restricted, indicate how greatly such

disorders might be held in check by preventing the movement of all animals affected by such contagious maladies, or which have been in communication with infected animals. The appearance of contagious diseases on any farm or in any dairy premises, or amongst any sort of stock, should at once be reported to a properly constituted local authority. From infected premises no animal should be removed alive without a special order, nor until the premises be entitled to a clean bill of health. Fines should be exigible for any stock labouring under any contagious disease, and kept without information having been given of the occurrence of such sickness; fines would also be fairly imposed for any diseased stock travelling on any public road, or taken into any market-place or railway station. All market-places, fairs, important railway loading stations, should be under strict inspection. In all railway or other journeys extending over eight or ten hours, provision should be made for the feeding and watering of the stock, and for their protection from inclement weather. The attention of the Legislature ought to be directed to the internal arrangement of the stock traffic of the country. We require to be protected from diseases already in our midst as well as from those which threaten us from abroad.—*North British Agriculturist.*

Nut Growing.

It is somewhat surprising that with all our nation's love of gain, and the general appreciative admiration of beautiful trees for shade and ornament, we have so few instances where nut bearing trees have been adopted for planting in the place of maple, elm, or linden. The chestnut, butter nut, black walnut, and Madeira nut, where the climate will admit, are all beautiful as shade ornamental trees; can be transplanted while young without a loss of over ten per cent.; grow very rapidly, and come into bearing usually from the seventh to the tenth year from seed. The hickory or white walnut is more difficult of transplanting; but even that we have removed with success by digging deep and obtaining, and again replanting entire, the tap root. This tap root retaining is, in fact, a feature of importance with all the nut bearing trees, its loss often resulting in the death of the tree, while, if fully retained, a tree rarely dies. It is, however, more certain, and probably most economical, to plant the nuts where trees are designed to stand. This may be done and the ground yearly cropped to corn, potatoes, or small fruits, and at the end of five years or so it may be left in the grass if desired. As a paying productive crop, as a permanent investment, attended with little or no labor in the culivation, pruning, etc., we know of nothing more reliable than that of an orchard of nut bearing trees. Our native forest trees are being rapidly destroyed; and without the attention of horticulturists to the subject of growing nut bearing, as well as apple and pear trees, we shall soon find the products of our native land, in this particular, more rare than of foreign shores. Already the chestnut commands a ready sale at from eight to twelve dollars a bushel, while the white walnut sells freely at from two to three dollars; and yearly as time rolls on, the price is enhanced rather than reduced, because of the increased demand and the lessened product by reason of cutting away the native forest trees. We write this, having just come from an orchard of about sixty trees, now about twenty-five years old, and from which the owner last year gathered an average of over one and a half bushels to the tree, paying him a net return, exclusive of labor of gathering, of over six hundred dollars. These trees stand in pasture land, and when the owner was clearing up the forest, were young saplings and left to grow with a hopeful looking forward to the present result. In our earlier days we spent many a day gathering the white walnut, and our recollection is of six to eight bushels of fruit to the tree, for which buyers then paid one dollar a bushel; and as the trees were in pasture land, the product was a clear net gain, extremely acceptable to the owner.—*Horticulturist.*

A conference of fish commissioners took place in New York on Tuesday, of last week, to devise means for securing harmonious action between the States for the cultivation and preservation of fish.

The Oregon crops are very large this year. Wheat is selling in Portland at from 65c to 70c per bushel and oats at from 45c to 50c.

It has been estimated that the actual money loss to England by the cattle plague has been £3,573,000. Of the cattle attacked by the plague 210,000 are dead.

From Mark-Lane Express, Oct. 12, 1868.

Thin Seeding.

The following letter has been addressed to the members of the Ormskirk and Southport Agricultural Society:

GENTLEMEN: A good deal has been lately written on the subject of thin seeding of wheat and other grain; and the system of thin sowing has been strongly advocated by that well known and progressive farmer, Mr. Mechi, of Tiptree, and other writers in the agricultural publications.

I have given a good deal of consideration to the subject, and from observing the wheat-plant for several years, come to the conclusion that thin sowing is essential to its attaining a proper development and yielding a maximum return. So satisfied had I become of this that I tried an experiment on two statute acres, the particulars and result of which I now publish for the consideration of the members of our Society.

Crop of 1867 was potatoes.

The two acres were ploughed on 2d and 3d, October, in one-and-a-half days.

October 3.—Harrowed in half a day.

October 5.—Sowed with machine adopted for dibbling in drills, seven inches apart, in three hours, by two men with pair of horses; the quantity sown being two pecks, or one peck per acre.

October 18.—Wheat coming up.

1868. March 21.—Sowed mixed light manure, costing £1 8s. 6d per acre.

May 11.—Weeded field in one day, by one man and three women.

June 13.—Wheat field fully shot.

July 27.—Cut with machine; bound and set up in six hours by five men and four boys.

August 4.—Carted in half a day.

August 10.—Threshed by machine in half a day, and gave a return of 97 bushels, of 63 lbs. per bushel, or 48½ bushels, of 66 lbs., being 45¼ market bushels of 70 lbs; besides about four bushels of light wheat, suitable for pig-feeding. This would give per Cheshire acre, which is best understood in this district: sowed, half a measure per acre; return, 102 measures.

I have not yet had the straw weighed, but it will yield a full average quantity, and it is so thick and strong that it would have stood in any weather. Many of the plants produced upwards of thirty stalks from one grain, and the heads were five or six inches in length, the largest containing nearly 100 grains. I have compared my return with that of Mr. Mechi, as lately published by him, and find that, though he advocates sowing a peck per acre, he, this season sowed a bushel, and his return was per acre, 50 bushels, of 63 lbs., equal to 43, of 70 lbs., showing 1½ bushels in measure more than mine, but 2½ bushels in weight less.

I have heard it objected to thin sowing that, from the want of the shelter of thickness, the crop would be late, which, in ordinary seasons, would be an important consideration; but mine was one of the first ripe in the district. I am so thoroughly satisfied with the result of this experiment that I have this season sown one field which is not in very good condition, with half a bushel per acre, and another, in good condition, with less than a quarter of a bushel per acre. I believe that this system requires only to be tried to be generally adopted. It is a subject of national importance, as the amount of grain now wasted in over-sowing is enormous, as the following calculation will show:

By the Board of Trade returns, just published, the average under wheat in Great Britain this year was 3,646,260 acres, the average sowing on which would be at least two and a half bushels, allowing half a bushel, (or double mine), would give two bushels per acre saved, or 7,292,520 at 9s. per bushel—£3,281,434.

I trust that the result of my experiment may induce others to try similar ones, which I would recommend being tried on a small scale first; and I shall be glad that they find, as I have done, that they can use less seed and have larger returns; but it must be borne in mind that late sowing and light or bad-conditioned land will require thicker seeding than high-conditioned land sowed early I am, &c.,

J. P. DUFF.

In Kansas, 26,000 acres of land have been purchased for a colony of Swedes who are coming over in the spring.

The shipment of hops from Newport, Vt., in three days amounted to nearly 100,000 pounds. They were sold at 15 cts. per pound.

All our discontents about what we want, appear to me to spring from want of thankfulness for what we have.

SUNDAY READING.

Another reason of our superficial hold on truth is, that we Christians do not meditate. Many men only think of meditation as if it were a dreamy, listless process, unworthy of those who, as men and as christians, have a serious work to do in life. But meditation is not Tityrus, lying at ease under the shade of a wide-spreading beech-tree; it is David, hunted for his life, yet deliberately pausing ever and anon to contemplate and to praise the divine attributes of justice and mercy; it is St. Paul, spending three years as a solitary recluse in the Arabian desert, that he may be nerved with a divine strength for the conversion of the world and for his martyrdom; it is St. John, an exile and a prisoner for the name and patience of Jesus, reading in the opened heavens the coming history of the Church. Meditation is an intense act of the whole soul moving forth to welcome and to embrace truth; it is intelligence marking out the exact limits and range of truth.

Prayer is the principal and most noble part of God's worship, and is to be preferred before preaching; nay indeed, to speak strictly and properly, preaching is no part of divine worship; for every proper act of divine worship must have God for its immediate object, and God's glory for its immediate end. But the immediate object of preaching are men, to whom it is directed, and the immediate end of it is the instruction of men; though it is true, in the ultimate end of it, it tends to, and ends in, the glory of God, as, indeed, all religious actions do, and all our other actions of moment should do. But prayer is immediately directed to God himself, and it is an immediate glorification of Him, and a paying of divine worship and honor to Him. In a word, by preaching we are taught how to worship God; but prayer is itself God's worship.

Under the teaching of Satan men invert God's order. For God has attached a sense of shame to sin, and given confidence to the confession of sin; but the devil attaches to sin confidence, and to confession shame.

Good resolutions will cool again, when they are off from the fire of a present good word, if they be not speedily put in execution.

Let us not ask of the Lord deceitful riches, nor the good things of this world, nor transitory honors; but let us ask for *light*, not, indeed, that kind of light which is confined to place, which is limited to time, which is subject to the interchange of darkness, which even the beasts have in common with ourselves; but that light, I mean, let us seek, which we shall enjoy in common with the angels only, which neither dates from any beginning, nor is circumscribed by any end.

The meanest and most contemptible person we behold is the offspring of heaven, one of the children of the Most High; and, however unworthy he might behave himself to that relation, so long as God hath not abdicated and disowned him by a final sentence, He will have us to acknowledge him as one of His, and as such to embrace him with a sincere and cordial affection.

When He says, *with all your heart, with all your soul, and with all your mind*, He leaves no part of our life disengaged, so as to admit the enjoyment of aught else; but whatever incentive to our love may arise, (illuc rapietur, quo totius dilectionis impetus currit) let it be carried quick into that channel, where the main torrent of all our affections is borne along.

If there is nothing different in my life and conversation, that shews me to be different from a Jew or a heathen; if I use the world and worldly amusements, as the generality of people now do, and in all ages have done, why should I think I am among those few, who walk in the "narrow way" to heaven?

"The *hosannah* of little children is not less pleasing to God than the *hallelujah* of men." I find this aphorism quoted by Bishop Andrews. There is a just distinction here; for, while the young should *pray* for mercy, the elder should *praise* God for mercy received.

Alas! how little reliance can be placed upon kind hearts, quick sensibilities, and even devotional feelings, if there is no religious principle to guide, direct and strengthen them.

Next to hypocrisy in religion, there is nothing worse than hypocrisy in friendship.